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STYLES OF DISCOURSE

Edited by

Tatiana Denisova,
Ioannis Vandoulakis

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Introduction

Discourse is a kind of code with the help of which reality is codified, structured, understood, and interpreted. Discourse performs not only descriptive and interpretive functions but also generative, creative, and structural ones.

The style of discourse is a way of describing a cultural text, that is, any piece of human-created reality. The depth and perspective of the semiotic interpretation of a cultural text, as well as the vision of the entire architecture of the cultural space (semiosphere), to which the text belongs, depends on the style of discourse. Thanks to a particular style of discourse, things are approached by a researcher (subject) in a certain way, allowing them to be seen from a certain point of view or even to be seen in general. Thus, discourse performs both cognitive and ontological functions, and the variety of styles of discourse allows one to create a panoramic, multi-layered picture of reality.

This issue focuse on the diversity of styles of discourse across a wide range of topics, including exposition, debate, narrative analysis, philosophical essay and history, mathematical proof, logical argumentation, historical text, myth, metaphor, literature, art, architectural styles, and others. The study is not be restricted only to the humanities and the arts. Thomas Kuhn's concept of "paradigm" as a variation of the concept of style of thought functions as a group style, a shared (by a community) style of understanding and thinking about what is considered to happen in nature. Styles of scientific thinking, and other relevant concepts, have social and cultural determinations and serve as media of communication among scientists who share a particular worldview. A transition from one style of thinking to another marks a radical change.

The authors of this issue submitted articles that fall under the general theme "Styles of Discourse" from the points of view of philosophy, aesthetics, semiotics, logic, history of science, and natural science, as broadly understood, including studies on:

- Styles of discourse in the form of creativity in various fields of the sciences, humanities, and arts manifested in the outcomes of the work of both historical and contemporary creators.
- Styles of discourse in science versus discourse styles in the humanities and the arts.
- The significance of intuition, insight, and guessing in communication, understanding and interpretive processes. How rational discourse eventually leads to intuitive insights that, in turn, can be used as building blocks for further reasoning.
- Discourse analysis concerning the style of argumentation and focusing on epistemological and discursive practices.
- The relationship between the change in the type of rationality and the style of discourse.
- Historical variations of scientific language and changes of thinking styles.
- Personal vs collective styles of discourse.
- Monologic vs dialogic styles of discourse. Monological ultimate worlds, created by a single consciousness, vs dialogical discourse styles between a multiplicity of agents that have their word and voice.
- Cultural and social aspects of styles of discourse.
- The poetic function of discourse styles in the sciences, humanities, and arts.

The volume starts with the paper of Lynn Maurice Ferguson Arnold, former Premier of South Australia and former Minister of Education of Australia, concerning the *Exposition Internationale des Arts et Techniques dans la Vie Moderne* (International Exposition of Art and Technology in Modern Life) that was held from 25 May to 25 November 1937 in Paris, France. The organization of the world exhibition had placed the Nazi German and the Soviet pavilions directly across from each other. Many papers are devoted to the interpretation of this opposition. Arnold's paper considers the differences in the two totalitarian states' architectural and design discourse styles. Although each of them communicated a totalitarian language of purposes, permissions, and boundaries, they essentially differed in the styles of discourse represented by the architecture and design of their respective pavilions. They were opposites of each other and the liberal ideals they contested. The internationalist viewpoint reflecting the multi-ethnic mix of the USSR is contrasted to the *ein Volk* homogeneity represented in the German pavilion. The Soviet pavilion opted for a utopian future to be arrived at by "benign"

leadership, whereas the German pavilion anchored itself in the myth of Teutonic history with the nostalgic pride protected by the swastika-bearing eagle.

Jean-Yves Béziau is best known as a logician and founder of Universal Logic. However, in this paper, he poses a new philosophical question: why philosophical discourse does not use images? The paper begins with a general analysis of different types of philosophical discourses. Then, he focuses on why images have been and are still rejected in philosophical discourse? He explains various ways to use images in a fruitful way to develop philosophical thinking and discourse and illustrates his view by providing several examples. He concludes with a promising programmatic declaration about founding a new journal entitled *World Journal of Pictorial Philosophy* to stimulate the usage of images for developing philosophical thinking.

Although complaints about the obscurity of many philosophers' discourse are widespread, Tatiana Denisova, ex-professor of the Surgut University and a research associate of the University of the Aegean undertakes a positive attitude to this problem. She explains that the reasons for the obscurity of philosophical texts, the subsequent complexity in communicating philosophers' meanings and their eventual incomplete understanding is not a sign of their inferiority. On the contrary, it is a sign of the fruitfulness of philosophical discourse, which can generate new meanings. Thus, the darkness of philosophical discourse is like the life-giving chaos, and the obscurity that it inevitably contains can be the keeper of implicit meanings and even their generator.

Katarzyna Gan-Krzywoszyńska and Piotr Leśniewski, authors of a monograph on Polish philosopher Kazimierz Ajdukiewicz (1890–1963), make a comparative analysis of his educational style with that of Paulo Reglus Neves Freire (1921–1997). The authors highlight that these scholars have distinctly different backgrounds. The former was an educator, philosopher and a leading advocate of critical pedagogy, connected with the dialogical Latin-American tradition. The latter was a philosopher and logician, notable representative of the Lwów–Warsaw school of logic with significant contributions to semantics, model theory and the philosophy of science. Despite their apparent difference, the authors identify some striking similarities regarding their attitudes towards education; notably, their approaches are essentially *dialogical*.

Gilah Yelin Hirsch is a multidisciplinary artist who works as a painter, writer, curator, educator, and filmmaker. In her experiential paper, he explains how and why she uses four channels of communication in her creative expression: writing, painting, filmmaking, and teaching as dialogic inquiry.

She considers that these channels compose a continuum of discourse styles, each reaching a different facet of kaleidoscopic consciousness. She claims that her choice of medium is prompted by a need to communicate her insights profoundly. Thus, for instance, she created painted allegories to express narratives based on dreams and visions emerging from her subconscious. Art and healing is another Tibetan-rooted type of discourse practised by the author. Creating and observing a healing image produces a positive psychophysiological change in both the artist and the viewer. The discourse here is tripartite between creator, image, and viewer. Filmmaking is another type of discourse she practices between the filmmaker/artist as shaman or healer and the viewer as respondent or participant. These films are meant to be experienced frame by frame, physically and emotionally in both the body and mind.

Jocelyn Ireson-Paine is a cartoonist and programmer. His paper offers an original attempt to use category theory in cartooning. Category theory is a branch of mathematics that provides concepts and methods to describe general abstract structures in terms of a labelled directed graph called *category*, whose nodes are called *objects*, and whose labelled directed edges are called *arrows* (or *morphisms* or *transformations* or *mappings*). The author explores different ways to define "style" in art using category theory and a relational view of art. Moreover, he examines how "translation" (transformation) between styles could be defined and reveals the difficulties of how it could be implemented in a computer using special software.

Jens Lemanski is a philosopher who has revived research in Arthur Schopenhauer's legacy by exploring his work on mathematical evidence, logic diagrams, and problems of semantics. In this paper, he advances a new approach to eristic as an art of protecting oneself from the one who deliberately violates norms of discourse ethics to win an argument. The author attributes the origins of this view to Schopenhauer, suggesting a new reading of his work. According to the author, eristic is a prohibitive technique that takes effect when the norms of discourse ethics are transgressed and violated. Thus, eristic is viewed as a discipline of Enlightenment philosophy and a correlate of discourse ethics.

Roshdi Rashed is an authority on the history of Arabic mathematical sciences. Proceeding from Gilles-Gaston Granger's definition of mathematical style, he studies the question of whether a mathematical work can be characterized by a single style or by a multitude of styles? This question is explored within the style of a single work, namely Menelaus's *Sphaerica*, and through the study of the development of a single problem over time, namely the isoperimetric problem. He indicates Menelaus's divergence from the

Euclidean style of (plane and stereometric) geometry caused by the drop of the Parallel Postulate, which associated it with hyperbolic geometry. Hence, the author concludes that Menelaus's *Sphaerica* incorporates the well-known Euclidean style with a variation of the non-Euclidean one. On the other hand, examining the isoperimetric problem reveals another interesting historical picture. A succession of different styles (cosmological, geometric, infinitesimalistic, style of the calculus of variations, of synthetic geometry) can be observed due to the transformation of the research object over time.

Boris Shalyutin, a Russian social philosopher, Ombudsman for Human Rights in the Kurgan Region, explores the origins of discourse in combination with the birth of society and law. He claims that legal discourse marks the historical emergence of discourse in general. *Homo Juridicus* generated *Homo Sapiens*, which have created new spheres of discourse, notably moral discourse and further philosophical, political, and scientific discourse.

Petros Stefaneas, a logician, computer scientist and novelist, suggests an alternative to the traditional narratology approach for studying (interactive) social media discourse. He claims that style describes how the parts of a narrative are blended into a whole. The author relies upon Goguen's and Harrel's concept of style as a choice of blending principles and transfers to the study of the social media narratives elements from the methodology of studying Web-based collaborative search for mathematical proofs like those implemented within the Polymath project.

The last paper belongs to Ghil'ad Zuckermann, a linguist, language revivalist, proponent of a model of the emergence of Israeli Hebrew, according to which Hebrew and Yiddish were the primary sources of Modern Hebrew. This paper explores the fascinating and multifaceted Yiddish language and its survival in Israeli. Yiddish is characterized by a unique style that embeds psycho-ostensive expressions throughout its discourse. The author highlights the cross-fertilization between Hebrew and Yiddish, as it manifests itself in any aspect within the Israeli language. He claims that Yiddish survives beneath Israeli phonetics, phonology, discourse, syntax, semantics, lexis, and even morphology, although traditional and institutional linguists have been most reluctant to admit it.

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From Ideals to Ideology—Two Contrasting Views of Architectural Discourse at the 1937 Paris Exposition

Abstract

If language is a word that describes a toolkit of communication, then architecture and associated design may be considered their own languages, which communicate the purposes, permissions, and boundaries of the socio-political contexts from which they arose. Such languages of architecture and design will have their own "grammatical" tools and discourse styles, with consequent differences of meaning between them. This paper considers the differences in architectural and design discourse styles expressed by two totalitarian states at the 1937 Paris International Exposition. Such expositions were traditionally places where liberal democratic ideals of free trade and discourse were extolled. The Soviet Union and Nazi Germany confronted such ideals through ideology in that forum. However, while each of them communicated a totalitarian language of purposes, permissions, and boundaries, there were essential differences in the styles of discourse represented by the architecture and design of their respective pavilions. Indeed, they were polar opposites of each other and the liberal ideals they contested.

Keywords

Paris Exposition 1937, Nazi Architecture, Soviet Architecture, Styles of Discourse, Realism

Introduction

That architecture and design have functional narrative is self-evident—even follies have their purpose. It is less evident that they may also have a metanarrative that transcends basic physical functionality. The metanarrative offers consideration of factors of greater import than the physical utility. These

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include ambience and aesthetics, but at a deeper level, they may be aspirational, promoting an idealisation of where society could be. Alain de Botton (2008, 137, 140) cites Friedrich Schiller as suggesting that art is "an absolute manifestation of potential' and that it is 'an escort descended from the world of the ideal"; from which he develops the concept of "idealised architecture" and the "project of idealisation"; the concept of the project being a style of discourse for achieving a goal. This paper proposes that international expositions, through their architecture and design, created a genre of discourse style which aspires to such idealisation.

Notwithstanding the diverse interpretations resulting from multinational participation in such events, broadly speaking, liberal democratic ideals of free trade and endeavour in a spirit of plurality have constituted the *telos* of the project of idealisation of international expositions. However, in the interwar period, two -isms—the Communism of Josef Stalin and the national socialism of Adolf Hitler, confronted that liberal idealisation with alternative metanarratives. This paper explores those alternative propositions and their contrasting characters.

International Expositions 1851–1937

International Expositions were not only a product of the Industrial Revolution with its need for the opening of world trade but also statements of projects of idealisation. *Hunt's Handbook to the Official Catalogues* of the first such exposition, the *Great Exhibition of the Industry of All Nations* held in the purpose-built Crystal Palace in London in 1851, described the purpose of that inaugural event thus:

> The Great Exhibition is […] a great exemplification of the present state of human industry and the efforts of the mind. We perceive in it the complete illustration of the application of science to all the purposes of use and ornament; we discover how far man has advanced in his knowledge of the physical agencies […] (Hunt 1851, vi).

In the following three-quarters of a century, many more expositions were convened, leading to a desire for a formal definition of purpose. Consequently, the Paris Convention of 1928 defined a fundamental purpose for such expositions as being "the education of the public: it may exhibit the means at man's [sic] disposal for meeting the needs of civilisation, or demonstrate the progress achieved in one or more branches of human endeavour or show prospects for the future" (Protocol to Amend the Conven-

tion Signed at Paris on the 22nd of November 1928 Relating to International Exhibitions; www.bie-paris.org/site/images/stories/files/BIE_Convention_eng.pdf). It was in this context, which was also in the wake of World War I and the Great Depression, that the 1937 Paris exposition was convened.

Paris 1937—Ideological Rivals Face Off Through Structure and Design

The plan for an *Exposition Internationale des Arts et Techniques dans la Vie Moderne*, approved in 1929 by the French parliament, was proposed to be a conceptual successor to the seminal 1925 *Exposition des Arts Décoratifs Modernes*. That exposition gave rise to the Art Deco movement, which defined much of the international architectural discourse of the following decades.

The exposition ran from May to November 1937 with a visual centrepiece of the Eiffel Tower, the 1889 exposition's relic. It had been intended for replacement by a much larger (700 m) and more modern structure, the *Phare du Monde* (Lighthouse of the World), but this never eventuated due to budget constraints. The exhibition site was bounded by the Trocadéro at one end and the École Militaire at the other with the unintentionally ironic *Avenue de Paix*, connecting them through the footprint of the Eiffel Tower. In the *esprit du temps* of the 1930s, planners had intentionality as to the central juxtaposed location of two key pavilions—those of the Soviet Union and Nazi Germany. Though elected a year earlier on an anti-fascist platform, Leon Blum's Popular Front government felt an urgent need to appease a resurgent Germany hoping to discourage it from hostile behaviour towards France by diverting its energies eastward against the Soviets.

Arthur Chandler wrote that the 1937 *Exposition Internationale des Arts et Techniques dans la Vie Moderne* "faced some of the most important dualisms that divided humanity against itself: the split between Paris and the provinces, between France and her colonies, between art and science, between socialism and capitalism, between fascism and democracy" (Chandler 1988, 9). Yet, the most visible dualism at that exposition was between Communism and national socialism.

The Bystander of the 7th of July 1937 (Fig. 1) described these two pavilions and their juxtaposition: "They are a fine pair […] each pavilion as it faces its rival, towers ambitiously into the Paris sky. The Reich eagle, ineffably contemptuous, perches on its swastika above the austere square-columned German tower, which looks at once permanent, arrogant, and sober. Over the way the Russian [sic] façade, faintly reminiscent of a cathedral, carries its

stupendous burden of sculpture, the young Soviet workers bear the hammer and sickle forward with an extraordinary intensity of challenge and triumph. It is, in fact, a queer drama of politics and architecture."

The 1937 Paris Exposition was an extraordinary showcase of national achievement and aspiration given the febrile socio-politico context which had arisen from the devastation of the "war to end all wars" and the Great Depression a decade later—all of which had been accompanied by the birth of quintessentially "modern" -isms in the form of Communism and national socialism/fascism. This study deals solely with the Soviet and German pavilions at that exposition. However, other pavilions also echoed similar themes such as the Spanish (with its display of Picasso's *Guernica* amid that country's raging civil war) and the Italian (with its assertion of Italian fascism under the leadership of Mussolini in the wake of Filippo Marinetti's 1920 *Manifesto de Futurismo*).

Fig. 1


The Bystander, July 7, 1937—17

Ideological Rivals

The Russian and German Pavilions in the Paris Exhibition of 1937

The Proud Contemptuous Eagle of the Reich

Carrying the Hammer and Sickle into the Future

Photographs by Norman Parkinson

© Illustrated London News Ltd Mary Evans

The Soviet Pavilion

In their 1935 brief for the pavilion, Soviet officials wrote: "The USSR pavilion must in itself be an exhibition object, expressing the expansion of socialist culture, art (and) technology" (Kangaslahti 2011, 193).

Designed by Boris Iofan, the Soviet pavilion in Paris was a product of an "ecumenical" phase of Soviet architecture reflecting Stalin's internationalist agenda "to consolidate (the Soviet Union's) position on the international scene and simultaneously legitimise its image with [...] leftist movements" (Udovički-Selb 2015, 42). This phase was during the Third International (or Comintern) era, whose seventh world congress in 1935 had advocated popular front tactics in a global contest against fascism and, therefore, downplayed class warfare, adopting a *realpolitik* of collaboration even with capitalist states.

It was beyond coincidence then that, notwithstanding the massive Mukhina statue atop the pavilion, its design echoed the Rockefeller Centre, whose first buildings had been completed in New York only four years earlier and which had been "widely publicised in the Soviet architectural press" (Udovički-Selb 2012, 39).

The German Pavilion

Like the Soviet pavilion, the German one was an expression of its authoring ideology. In the pavilion guidebook, Wilhelm Lotz wrote: "[the] building is a powerful display of the forces of a nation and the expression therein of its vital energy" (Kangaslahti 2011, 197).

Albert Speer, its designer, was delighted to be involved in the "construction of a new monument of the national socialist disposition realised after the will of the Führer" (cited in Fickers 2008, 294). At the same time, Gastón Gordillo quoted Speer as admitting that Nazi monumentality was a "nouveau riche architecture of prestige" with an "urge to demonstrate one's strength" (Gordillo, 2015, 61). It was undoubtedly self-consciously resistant to any Art Deco influence.

Though not as tall as the German, the Soviet pavilion was called a *небоскрёб* (*Neboskryob*—literally, a cloud scraper), whereas Speer's *Deutsches Haus* was referred to as a *Hochhaus* (a tall house or building), not a *Wolkenkratzer* (German for skyscraper) standing solid and stolid in the ground rather than reaching for the sky.[1]

Contemporary observers saw the two pavilions as combatants confronting each other (Fig. 2). However, the original French intention for their placement close to each other had been as engines of a C20 dialectic astride

[1] This is not an idle point, in 1937 Fritz Höger, who had hoped to be named *Reich Staatsarchiteken*, designed a 250 m skyscraper to be built in Hamburg and which was to be named *Gauhochhaus* (Regional High House).

the Avenue of Peace visually separated by the Eiffel Tower, an icon of Liberty, Equality, and Fraternity, which had been erected according to its architect Gustav Eiffel "as an expression of gratitude to the Revolution of 1789" [Laws, in Art and Political Crises: The 1937 Paris International Exposition (https://culturedarm.com/1937-paris-international-exposition/)].

Fig. 2

Source: Alamy Photos

Elements of Discourse

This study contends that there were essential differences in the styles of discourse evinced by both the Soviet and German pavilions. Danilo Udovički-Selb has argued that "though both of the Paris pavilions were composed of a pedestal and a statue, each belonged to disparate architectural territories" (Udovički-Selb 2015, 32). In order to consider those disparate architectural territories, it needs to be understood that different styles of discourse were involved and that they each embodied distinct interpretations of a complex of sub-components. In considering the styles of the discourse of the Soviet and German pavilions, it is therefore essential to examine the "lexicon" of sub-components constituting the language of architecture and design discourse. An examination of the discourse sub-components of Shape, Vector, Colour, Art, Technology, the Anthropic, and the Image of Leader follows. There will then be a consideration of how these discourse sub-components were woven together to create "languages" of architecture and design com-

municating the idealised visions of the Soviet and German ideologies, which contrasted with each other and the liberal democratic aspirations of such expositions.

The Discourse of Shape

To initial observation, the Soviet and German pavilions represented similar shapes that mirror-imaged each other across the Avenue de Paix. Each had a tall entry structure complemented by a horizontal body containing an exhibition space with an inner sanctum at the rear.

The German entry structure was the tallest pavilion building at the exposition. Speer asserted[2] a reactive element to his design since he claimed to have seen plans for the Soviet pavilion before its construction, which impacted his ideas. He had determined to make the German pavilion taller but, more significantly, he intended it as a bulwark, writing that he "designed a cubic mass […] which seemed to be checking this onslaught (of the Soviet statue), while from the corner of my tower an eagle with the swastika in its claws looked down on the Russian sculptures" (Speer 130 cited in Kangaslahti, 2011, 196-197).

A common feature of the two, however, was that each was a "sampler" of grander projects envisaged by their architects, which were themselves displayed by maquettes inside each pavilion—namely, Iofan's Palace of the Soviets and Speer's Deutsche Haus, a much larger building proposed for the Nuremberg complex started in 1934. Indeed, Speer had indicated his pavilion was a "guide(s) for future construction in Germany" (cited in Fiss 2002, 321).

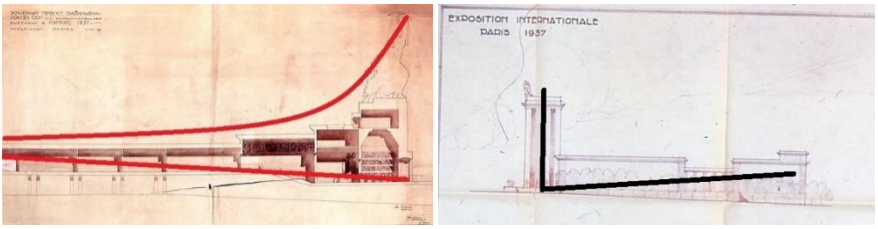
The Soviet tower, embodying as it did Art Deco design principles first popularised at the 1925 Paris exposition, was as "active" as the German was "reactive." The tower of the Soviet pavilion invoked the imagery of a ship's prow sailing forth, while the side elevation of the whole was suggestive of a locomotive pulling carriages. The German pavilion contained no such symbolism of movement; instead, it "stood as a motionless stud" (Udovički-Selb 2015, 32).

[2] It should be noted that Karen Fiss has demonstrated the improbability of Speer's claim (Fiss 2002, 60).

The Discourse of Vector

There was a significant contrast between the two structures. A consideration of implied motion or stasis in the two pavilions is suggestive of symbolic directional vectors in the design of both buildings. Fig. 3 superimposes my suggestion of the intent of the respective architects for those vectors on the cross-section design of each pavilion.

Fig. 3



Source: https://culturedarm.com/1937-paris-international-exposition/

There were two implicit vectors in the German pavilion—the downward, foundational gravitas of the entry tower from which a vertical aspiration might arise and the slightly inclining horizontal trajectory through the length of the exhibition space towards the inner sanctum at the rear. Udovički-Selb has written about the tower as a "deeply rooted, solitary pillar" (Udovički-Selb 2015, 32). There was a sense that the tower's solidity was anchored in a mythical past, the Wagnerian myth. Udovički-Selb has noted that the crystalline appearance of the tower evoked "the crystal architecture found in German medieval mythology" (op. cit., 34). The downward vector, rooting Germany in its past, enabled a corresponding upward vector that suggested a phoenix rising from the ashes of the First World War and the 1920s, a phoenix in the form of an eagle holding a swastika.

The two directions of the vertical vector, arising from meta-cultural origins and twentieth-century *Zeitgeist*, joined an inclining horizontal vector through the body of the pavilion. The guidebook to the German pavilion spoke of a "fundamental harmony" in the building as a whole and hence a unity between these two vectors. From this harmony, "a powerful display of the forces of a nation and the expression therein of its vital energy" was generated (cited in Kangaslahti 2011, 197). The exhibition spaces through which visitors progressed led to a quasi-altar in an inner sanctum at the pavilion's rear. There the German eagle with a swastika emblazoned on

a back-lit lead-light window loomed over four braziers standing altar-like before it. The message was clear, visitors entering through a portal redolent of a newly revitalised Germany built upon a historical myth would traverse through the displays of German accomplishment and then onto an altar to German millennialism—the idealisation of the so-called thousand-year Reich.

By contrast, the Soviet pavilion contained two different vectors. Firstly, an inclining vector led through the entry portal up a staircase to the exhibition space and then onto the inner sanctum at the rear. The grand staircase leading to the exhibition space seemed to evoke a glorious reversal of the staircase chaos depicted in the iconic 1925 film *Battleship Potemkin*; thanks to Soviet policy, the staircase seemed to say, people could now ascend to a brighter future rather than live terrified under Tsarist oppression. After arriving at the inner sanctum, the now "liberated" populace would recognise the need for leadership and encounter Stalin ready to lead them forth.

From this encounter, a second vector then arose, one of a surging upswing. The physical end of the pavilion represented the start of an aspirational journey, from the statue of the "beloved" leader Stalin in an upward sweep back through the exhibition space up the entry tower to the statue atop of the outstretched arms of the male factory worker and female collective farm worker—the idealisation of the ultimate global victory of the proletariat.

The Discourse of Colour

Externally, both pavilions were steel structures faced with pink granite and interstitial mosaics in the German pavilion, and Samarkand marble and Black Sea porphyry in the Soviet. However, internally the use of colour was different. The colour contrast of the interior of the two pavilions was more marked than the exterior. Fig. 4 contains a photo from each interior—on the left the Soviet, on the right the German.

The Soviet pavilion was strongly influenced by Art Deco's metaphysical adherence to white, a theme not followed in the German pavilion. The 1925 Paris Art Deco Exposition had idealised the status of white as a colour, imbuing it with significance beyond being either the aggregation of all colours or an emblem of purity. Le Corbusier, for example, extolled whitewashing over the coloured past, proclaiming it as his *Loi Ripolin* (Ripolin Law, after a famous brand of white paint of the time). He wrote about the virtue of a compulsory whiteness which would bring an "inner cleanness […] (a) refusal to

allow anything at all which is not correct, authorised, intended, desired, thought-out: no action before thought" (le Corbusier 1987, 188). Here white was neither the spectral containment of all colours nor an emblem of purity. It had become the antithesis of all colours and thus became a Year Zero in a culture abandoning polychrome ideological ambiguity for monochrome unity of purpose. White backdrops, therefore, predominated in the interior of the Soviet pavilion.

On the other hand, in the central exhibition hall, the German pavilion used deeply coloured, decorative wallpaper, which, combined with chandeliers, created a C19 opulence amidst which the products and achievements of the Third Reich were rather awkwardly displayed. Kangaslahti likened the effect to *Kunstkammern* (art galleries) of the late C19 (*ibidem*, 198). Karen A. Fiss has described the intentionality of such nostalgic design, "a reactionary turn back to nineteenth-century aesthetic codes," as being an effort "to mask the contradictions between Nazi *Völkisch* rhetoric and political-economic reality" by citing the German philosopher Ernst Bloch, who wrote of the "aesthetic of the *gute Stube* or parlour" in his study of fascism, *Erbschaft dieser Zeit* (Heritage of our Times) (Fiss 2002, 326). A modernist element strangely complemented the nostalgic colouring of the walls: red flooring, made from the German-invented synthetic rubber, evocative of the predominant colour on the Nazi flag and which "went unnoticed" as the public consumed the pavilion's peace rhetoric which concealed "the rumbling of Germany's new war industry" (Udovički-Selb 2015, 37).

Fig 4

Left photo: Manuscripts and Archives Division, The New York Public Library
Right photo: Alamy Photos

The Discourse of Art

Reference will be made shortly (in The Discourse of the Anthropic) to the statuary on display in both pavilions. However, paintings were also used extensively within each pavilion.

Both pavilions eschewed the widespread use of photographic images, preferring to use paintings as mural backdrops instead. There was some irony in this, given that both Soviet and Nazi German propaganda in the early 1930s had seen effective use of photographic images and montages to create an intensely modern sense of ideological achievement. However, by 1937 there were different agendas in play for both countries. In the case of the German pavilion, Gisèle Freund noted that "it is a myth which prevails upon man", which left no room for "photographic realism" (Kangaslahti, 2011, 198). Romy Golan has written, "the staging of the cultic effect […] was so successful that photographs seemed to have all but disappeared" (Golan 2018, 139-140).

In the case of the Soviets, previous advocates of the realism of the photographic image such as Gustav Klutsis had, by 1937, been humiliated into backing down, stating that "the assertions […] that the photo and photomontage have as their goal to squeeze out and replace painting and drawing are completely ridiculous and inaccurate" (ibidem, 137).

Thus by 1937, the artistic mythic suggestion had replaced photographic verisimilitude with painted image replacing the photographic ideology had replaced reality. However, the genres used in each case were different—Socialist Realism in the Soviet pavilion and Romantic Realism in the German one.

Socialist Realism, an art form designed to reflect and promote the ideals of a socialist society, had become "the official style of Soviet culture" in 1934 (first espoused at the First Congress of Soviet Writers). In the Soviet pavilion, a classic example was a large wrap-around mural in the inner sanctum of the Soviet pavilion which had been painted by Aleksandr Dejneka, portraying an idealisation of racial and cultural harmony in the Soviet Union showing "an airy, almost floating group of people dressed in white […] smiling as they advanced behind their leader" (Udovički-Selb 2012, 44).

In the case of Nazi Germany, T. W. Adorno wrote that Joseph Goebbels had spoken of Romantic Realism, a classically derived artform, as the new official doctrine for Nazi art (cited in Dahlhaus 1985, 58). Thus, artwork in the German pavilion, rooted in romantic imagery, consisted of "oil paintings of picturesque German landscapes and allegorical compositions" (Fiss, 328).

Perhaps by coincidence, the display in the German pavilion in Paris simultaneously took place with the antithetical *Entarte Kunst* (Degenerate Art) exhibition on display in Munich, displaying "denigrated artworks considered to be the products of decadent, Judeo-Bolshevist modernism" (ibidem).

The Discourse of Technology

Both Soviet and German pavilions sought to show the application of technology as part of their ideological narrative. Two areas of technology, however, highlighted their very different approaches.

The first difference is in automotive technology. Returning to Fig. 4, a streamlined prototype Mercedes racing car could be seen in the German pavilion; while in the Soviet, there was a mass-produced sedan (GAZ M-1) manufactured under the Ford Motor company's license. One is an example of innovative technology, the other derivative.

In the second, technologies of the moving image, the Soviet pavilion was content to show celluloid films to visitors. In contrast, the German pavilion had a theatrette where up to 200 people at a time watched its new television technology with programs which "were shown at intervals of 30 minutes, combining the play-back of films with live transmissions" (Fickers 2008, 301). The use by the Soviets of propaganda films was not exceptional (there was an entire French pavilion devoted to the cinema); television, on the other hand, was cutting-edge technology and was intended for more than mere entertainment. Andreas Fickers has posited that the viewing approach used in the German pavilion was in support of "National Socialist propaganda theory" since "the group reception of television in television halls ensured a consistent interpretation and minimised aberrant negotiations of meanings" (ibidem, 298).

In general, the Soviet Union was prepared to follow a derivative approach to technology, using innovations developed elsewhere, reflecting "the Soviet eagerness to catch up with America's technology" (Udovički-Selb 2012, 41). The German approach showcased a resurgent Germany promoting self-reliance through autochthonous technology. The futurist car and moving image technologies were just two examples of advanced German technology; Udovički-Selb noted that its pavilion housed several television circuits displays, including a video-telephone […] cutting-edge phenomena—Germany's visible "will to modernity" (Udovički-Selb 2012, 24).

The discourse of the Anthropic

In addition to painting, the human form was also represented in sculpture in both pavilions. Each had external statuary portraying its respective idealisation of the relationship of humanity and the state. Richard Overy has commented that "nothing quite encapsulates the contrasting image of the new humanity in the two dictatorships more completely" than the statuary outside these two pavilions (Overy 2004, 320).

Two statues at the entrance flanked the German pavilion. The one on the right consisted of three figures, two males in front with a raised female suggesting a guiding spirit. Sculpted by Josef Thorak, the statue was entitled *Kameradschaft* (Comradeship); Overy described the nude male figures as "models of so-called 'Aryan' man with bulging muscles and chiselled faces, standing defiantly side-by-side, one clasping the hand of the other in the expression of a unique comradely bond between race brothers and soldier-companions" (ibidem, 320). On the left of the pavilion was Thorak's statue, entitled *Deutsche Mann und Deutsche Frau* (German Man and German Woman). This work also had three figures and idealised the male and female nude figures in the fore with a female spirit behind them.

The Soviet pavilion's external statuary was of an order of magnitude many times larger than Thorak's 5 m tall statues. Vera J. Mukhina sculpted a six-story high, forty-eight-ton stainless steel behemoth depicting two figures entitled *Rabochiy I Kolkhoznitsa* (male factory worker and female collective farm worker) jointly holding a hammer and sickle aloft. The statue promoted a "vision of a mythical working-class vanguard" (Udovički-Selb 2012, 27). Its figures were clothed in ideologically appropriate proletarian garb.

The siting of the statuary in each pavilion was also an ideological statement about their respective idealised stereotypes of humanity. In the Soviet, the work was placed atop the entire structure, with the tower becoming a mere pedestal to working-class heroes, symbols of Communism's goal of a "dictatorship of the proletariat," the *telos* of the communist project after the withering away of the state. On the other hand, the German pavilion placed idealised humanity at the foot of its pedestal, adorned by a symbol of an overarching, protective statehood: the eagle with a swastika.

The Discourse of Images of the Leader

The competing New Orders on display in the two pavilions paid different obeisance in their architecture and design to their leaders. In the Soviet pavilion, a statue of a seated Lenin was placed deep in the exhibition space, but it was the upright statue of Stalin in the inner sanctum which was key to the overall discourse of the structure. That statue was the linchpin between the two vectors, the enabler of the populace seeking direction to lead to a new future. In 1937, the cult of Stalin was still being established in the populace, though it had already permeated all tiers of the body politic. A local party report advised that "there must be more popularisation of the *vozhdy* (leaders) and love for them must be fostered and inculcated in the masses, and unlimited loyalty, especially by cultivating the utmost love for comrade Stalin" (cited in Davies 1997, 150).

Udovički-Selb has noted that "in sharp contrast with the Soviet's ubiquitous images of Stalin, virtually no portrait of Hitler was found in the German pavilion, a shrewd propaganda move by omission" (Udovički-Selb 2012, 24). The German pavilion was surprisingly understated regarding the leader of the Third Reich. The absence of his portraiture, however, was not as self-effacing as it might at first have seemed; for, unlike Stalin, Hitler was the embodiment of Nazi ideology as both its founding voice, the author of *Mein Kampf*, and its unchallenged contemporary leader, *führer*; thus, Hitler was present even in his absence. On the other hand, Stalin was neither the founder of Communism nor its Soviet expression; he was only an inheritor of the mantle who, in 1937, still felt the need to stamp his authority brutally upon that inheritance.

The Language of the Pavilions

Both the Soviet and Nazi regimes strove for the mastery of communication as elements of control rather than information. Hitler had understood the power of the slogan, having written that propaganda "must be confined to a few bare essentials and those must be expressed […] in stereotyped formulas. These slogans should be persistently repeated until the very last individual has come to grasp the idea that has been put forward […] The leading slogan must […] be illustrated in many ways and from several angles" (from *Mein Kampf,* cited in Project Gutenberg). For his part, Stalin understood the social engineering power of words, having told the First Congress of the Union of Soviet Writers in 1934 that "the production of souls is more im-

portant than the production of tanks [...] and therefore I raise my glass to you, writers, the engineers of the human soul" (Wikipedia, *Engineers of the Human Soul*).

Very frequently, the enduring power of such propaganda had been through slogans. For the Nazis the overarching slogan summing up their propagandistic enterprise was *Ein Volk, ein Reich, ein Führer* (One People, One State, One Leader). Even though there were many slogans used by the Soviets in the wake of the Revolution, in the context of the 1930s, perhaps Gustav Klucis' 1931 poster slogan "USSR—shock brigade of the world proletariat" best summed up the endeavour of Soviet propaganda in that decade.

However, the Soviet and German pavilions of 1937 were not intended for their domestic audiences, and they were addressing an international one, most immediately those attending the Paris Exposition and the broader world that was watching from afar. For Hitler, that meant nuancing the increasing brutalism of his domestic message, making it palatable through such means as the 1936 Berlin Olympics. A similar need to turn a blind eye to domestic repression led the Soviets to extol internationalism through peace. While both pavilions were remarkably bereft of obvious sloganeering, there was one emblazoned in a key position in the interior of the Soviet pavilion, which in part read: "We are determined to pursue the politics of peace with all our force and by every means" (English translation of the original, which was in French) (cited in Kangaslahti, 2011, 196).

Udovički-Selb has summed up the duplicity of both pavilions thus: "The German pavilion *concealed* reality behind a classical façade; the Soviet pavilion *substituted* reality with fiction" (Udovički-Selb 2012, 45–46). How did the various sub-components of discourse style contribute to this concealment and substitution? Both required media massaging; in the case of Soviet substitution, a visitor to the pavilion noted that "Russian authorities seized the opportunity to show all that had been done [...] they supplied guides and lecturers, and you came away feeling that you knew something of the aspirations of industrial Russia" (Gloucester Journal 28/08/37, 11). While German concealment was achieved by obliterating any mass mobilisation imagery, à la the Nuremberg rallies from its pavilion.

Gastón Gordillo has written that "despite their ideological differences [...] these different monuments were designed as affective weapons intended to create a bodily state of respect" (Funambulist website). While there was a relative absence of propaganda through text, both pavilions, through their architecture and design, created ideological "hieroglyphs" of structure, design, and art to communicate their distinctly different totalitarian visions of

an idealised future. Udovički-Selb has proffered the idea that the "most essential underlying difference between the German and the Soviet pavilions was the incarnation of two singularly different historical conditions: Epimetheus versus Prometheus" (Udovički-Selb 2012, 44). Epimetheus, the Titan representing Afterthought with his brother Prometheus, Forethought, have been described by Karl Kerenyi as "representatives of mankind" (Kerenyi 1951, 207); in Udovički-Selb's proposition, Nazi Germany looked backwards to a mythic Epimethean past for hope and inspiration, while the Soviet Union looked to a utopian Promethean future.

German Discourse of Architecture and Design

William J Dodd has described the "discourse practices of National Socialism […] (as being) an amalgam of historical discourses which had gained currency in the long C19 […] and (which) were intensified after the defeat of 1918" (Dodd 2018, 13). Each of the elements of architecture and design of the German pavilion spoke to this, with classical structure and reactionary vectors and rich colours in defiance of modernist simplicity all against a backdrop of pre-C20 style painting. However, this reactionary and nostalgic perspective chose to speak of a promised land to which Nazi ideology would lead the Volk. In 1933 they coined the word *Gleichschaltung*. The etymology of the word comes from *Gleich* (equally) and *Schalten* (to govern), with the latter having an even earlier Old Norse origin from *skalda* (ferryboat) (Merriam online dictionary). The pavilion intended to show a promised land, rich in history but evoking new technology from a rich and distinctly German heritage. Nevertheless, the journey to the promised land, the idealised future, would need a national socialist boat steered by the Führer as a helmsman.

This presentation all came together in a project that Karen Fiss notes intended that "journalists were expected to describe the German pavilion as the embodiment of the Third Reich's dignity, restraint, and quiet pride […]" (Fiss 2009, 55).

The Soviet Discourse of Architecture and Design

Until 1944, *The Internationale* was the "national" anthem of the Soviet Union, the chorus of which went: "Then, comrades, come rally! / And the last fight let us face. / The Internationale / unites the human race." Internationalism was a message which resonated with many in the 1930s and thus was the

spirit the Soviet pavilion addressed. Frank Lloyd Wright, who visited the pavilion, later addressed the First USSR Congress of Architects, held in Moscow in June 1937. In his closing address, he touched upon the Soviet architecture and design discourse, noting that "this tremendous social construction (the Soviet project) […] is calling upon Architecture for help and direction" (Laws, (https://culturedarm.com/1937-paris-international-exposition/)).

There was unintended irony in Wright's reference to "this tremendous social construction," for his words were spoken during considerable turmoil within Soviet architecture, which itself had been echoing the purges happening elsewhere in the country. Indeed, two different versions of Wright's speech were published in Russian—one appearing in *Pravda,* the other printed in the journal *Arkhitektura SSR* each serving a distinct purpose in the task of engineering souls (Johnson 1990, 219).

There is no Russian word for *Gleichschaltung;* indeed, the concept had no resonance in the Soviet Union, which was premised on the idealised notion of the people and their hierarchy of *soviets* (councils). The spirit of the word "soviet" includes advice, harmony, concord, but in the 1930s, such "harmony" needed strong leadership. While the German discourse on architecture and design might have been settled while the Nazis were in power, there was, in 1937, no such finality to the debate regarding the Soviet discourse which Stalin was still in the stage of brutally shaping. His pavilion in Paris had echoed an internationalist spirit, but it would soon be replaced in the Soviet Union itself with Socialist Classicism which would predominate for the remainder of Stalin's rule.

Fig. 5

Source: Alamy Photos

Conclusion

Fig. 5 shows the final salon, or inner sanctum, of each pavilion. These spaces summarised the discourse styles of the regimes as manifested at the 1937 Paris International Exposition.

The language of a system communicates the purposes, permissions, and boundaries of socio-political context. So, the inner sanctum of these pavilions potently spoke to those tasks in different ways in their separate answering of the three objectives of international expositions laid out by the 1928 Paris Convention.

The first objective of the Paris Convention was "exhibiting the means for meeting the needs of civilisation." To circumscribe a civilisation is to set boundaries. Those boundaries were distinctively different in the two pavilions. Murals portrayed the dictatorship of the proletariat in the Soviet inner sanctum and the giant statue atop the building. On the other hand, a unified state of one people, the *Reich*, symbolised the swastika in an altar-like position in the German one.

The means of any system is by creating permissions to define the "who" permitted to flourish within its space; this relates to the second objective of the Paris Convention, "demonstrating the progress achieved in human endeavour." The murals of the Soviet inner sanctum showed a plural understanding of humanity, reflecting the multi-ethnic mix of the USSR and its internationalist viewpoint. This contrasted with the *ein Volk* homogeneity conveyed in the murals in the German pavilion. Thus, these two approaches posited a competition between internationalism and nationalist self-reliance to achieve human progress.

A system has an implied purpose by any logical analysis, a *raison d'être.* In a similar vein, the final objective of the Paris Convention called for "showing prospects for the future." The Soviet pavilion opted for a utopian future to be arrived at by "benign" leadership, with an optimistic spirit conveyed by the murals with the father of the journey, Stalin, as a centrepiece. However, the German pavilion anchored itself in the myth of Teutonic history, alluded to by the murals, with this nostalgic pride protected by the swastika-bearing eagle.

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Imaging Philosophical Discourse

Abstract

I first present a general analysis of the different types and kinds of philosophical discourses. The second part examines why images have been and are still rejected in philosophy. In the third part, I explain the different ways to fruitfully use images to develop philosophical thinking and discourse, in particular by giving various significative examples.

Keywords

Imagination, Picture, Symbolism, Plato's Cave, Illusion, Perception, Meaning, Advertisement, Propaganda, Children

Elle était sage comme une image
mais elle avait beaucoup de fantaisie
sans jamais toutefois sombrer dans les phantasmes
et n'avait pas peur des fantômes !

Baron de Chambourcy

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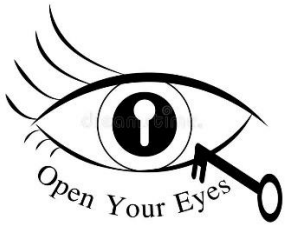


1. Philosophical Discourse

1.1. General Considerations about Speaking and Writing

Nowadays in philosophy, like in other academic fields, researchers generally give courses and lectures, and also write papers and books. We have the following table:

Speaking	Courses
	Lectures
Writing	Papers
	Books

There are many different ways to proceed. On the one hand, each person has his/her own *style*. On the other hand, there are different available *techniques*. Images can both be used when speaking and when writing. Although they are widely used in science, few philosophers use them.

Some scholars are more *speaking scholars*, and others are more *writing scholars*. One of the most famous philosophers, Socrates, did not write anything, like Buddha and Jesus. However, their followers wrote a lot. This was the case of Socrates's follower, Plato and his student Aristotle. René Des-

cartes also wrote quite a lot but did not speak too much, Schopenhauer even less. Quine, as he admitted (see Quine 1985),[1] was a terrible speaker but a good writer; see, e.g. *Methods of Logic* (1950). Heidegger was a good teacher, and some of his books, such as *What is a Thing?* (1962), are close to the teaching he was giving, showing a harmony between writing and speaking.

In Wittgenstein's case, there is a disparity between his teachings, which his students transcribed and the elaborated notes he wrote. Ray Monk describes Wittgenstein's teaching style at Cambridge as follows:

> His lecture style has often been described, and seems to have been quite different from that of any other university lecturer: he lectured without notes, and often appeared to be simply standing in front of his audience, thinking aloud. Occasionally he would stop, saying, 'just a minute, let me think!' and sit down for a few minutes, staring at his upturned hand. Sometimes the lecture would restart in response to a question from a particularly brave member of the class (Monk 1990, 289).

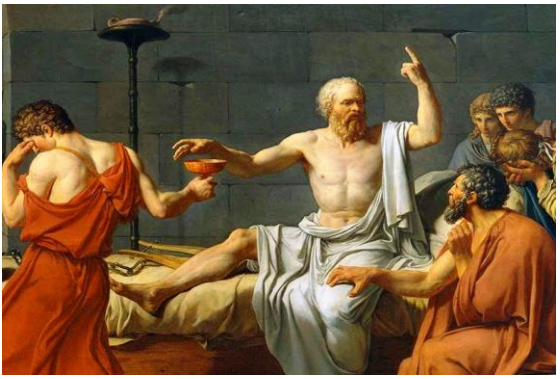
1.2. Oral Presentations

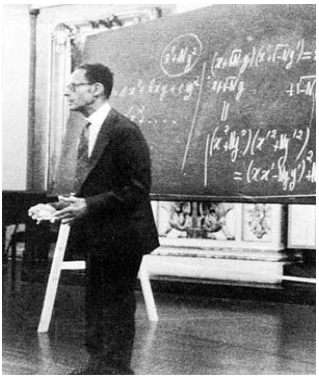
Apart from teaching courses or giving presentations of lectures at seminars and conferences, we can distinguish four different techniques which are nowadays used for oral presentations by professors/researchers in all fields:

Speaking	Waiving hands
	Writing on the board
	Reading
	PowerPoint

This table represents a pretty exhaustive description of the situation, but the four categories are not necessarily exclusive. For example, someone may write on a board and waive hands between different intervals. To make this table exhaustive and exclusive, we can call a "boarding speech", a speech where writing on the board is predominant, the same with the other three categories.

[1] I had the pleasure to attend the last talk of Quine, at the *20th World Congress of Philosophy* in Boston, USA in 1998.





Boarding lectures are rare in philosophy, but philosophers use the board in the classroom. Mathematicians use the board both in the classroom and for conferences. In philosophy, whether continental or analytic, there is still a strong tradition of *reading lectures*, despite the emergence of PowerPoint. *Reading speeches* in mathematics would make no sense. Analytic philosophers also use some symbolic formulas, but far less than mathematicians. They often perform *reading lectures* giving *handouts* to the audience.

For a broad audience, w*aiving speeches* are nowadays standard, including in philosophy, cf. TED talks. They have a theatrical dimension that can degenerate into the sophistry of persuasion.

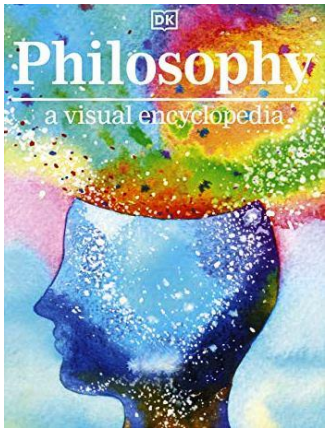
There are also philosophical discussions on TV where people are seated, interviewed or debating with colleagues.

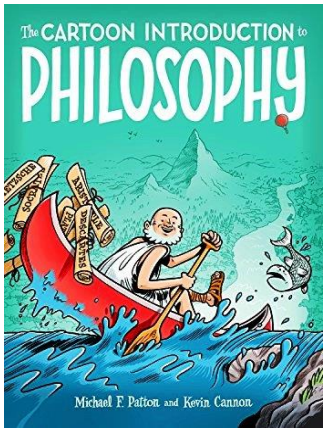
These discussions require a *mise-en-scène*, generally alternating plans *américains* with *close-ups* and *shots/reverse shots*. Although the visual aspect is important, images dealing with the subject of the talk/discussion are not in general used in these TV shows.

However, this is done in videos whose quantity has increased due to YouTube channels, including philosophical videos.

1.3. Written Works

Most written works in philosophy, papers or books are only black and white scriptures. There are some exceptions for introductory books or books for young people, where images are used:





The techniques of writing in philosophy have been quite diverse and still are. Here is a table:

Writing	Aphorism
	Dialogue
	Story
	Declarative

The first important w*riting philosopher*, Plato, used dialogues, influenced by Socrates and Greek theatre. Most of the time, his dialogues include stories in the form of myths or allegories. The dialogue tradition has been used subsequently (see Bénatouïl and Ierodiakonou 2019) but has progressively vanished and is not much used nowadays. Hegel's dialectic is a dialogue of reason with itself…

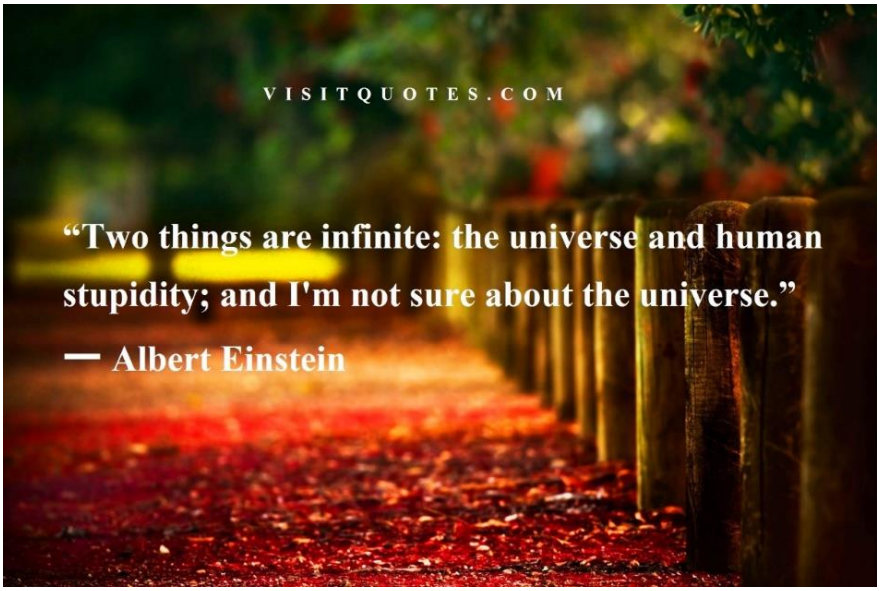
Aristotle was the first to promote *declarative writing* systematically. Declarative writing can be argumentative, but Aristotle was not a sophist! Declarative writing can be more or less *descriptive*, more or less *normative*. It can present, explain, discuss, comment, justify a theory, for example, the theory of causality.

We have to remember that the distinction between a thought and its assertion was clearly emphasized only by Frege at the end of the 19th century by the introduction of his famous stroke: ⊢ (1879); and that contrarily to what Bertrand Russell funnily claimed, a written sentence, starting with a capital letter and ending with a full period, is not necessarily an assertion.

Aphorisms are terse sayings/writings that can vary in their affirmative tenure and length and how they are combined with other aphorisms or writings. There are famous aphorisms from Pre-Socratic philosophers, like Anaximander's one: "The undetermined is the structure of everything."[2] Before that, there were the "proverbs" of Solomon, like the proverb 3:13: "Joyful is the person who finds wisdom, the one who gains understanding." Wittgenstein in the *Tractatus* (1921) presented a series of terse writings organized in the form of a tree. This organization is not the same as the one promoted by Spinoza in his *Ethics* (1674), plagiarizing mathematical discourse. However, it is more structured than Spinoza's *Tractatus Intellectus Emendatione* (1662), Pascal's *Thoughts* (1670), Nietzsche's *Gay Science* (1882), or Descartes's *Rules for the Direction of the Mind* (1628).

[2] This aphorism was commented by Heidegger (1946), but he focused on another aphorism by Anaximander. Marcel Conche gave a one-year class at the Sorbonne in 1987-88 on Anaximandre, mainly concentrating on this aphorism.

Among terse writings, there are also quotations. Their statute is often ambiguous because it often has been extracted from a text, and the source is not secured. There are nowadays a lot of "illustrated" quotes on the internet, but the relation of the image and the meaning of the quote is often random:

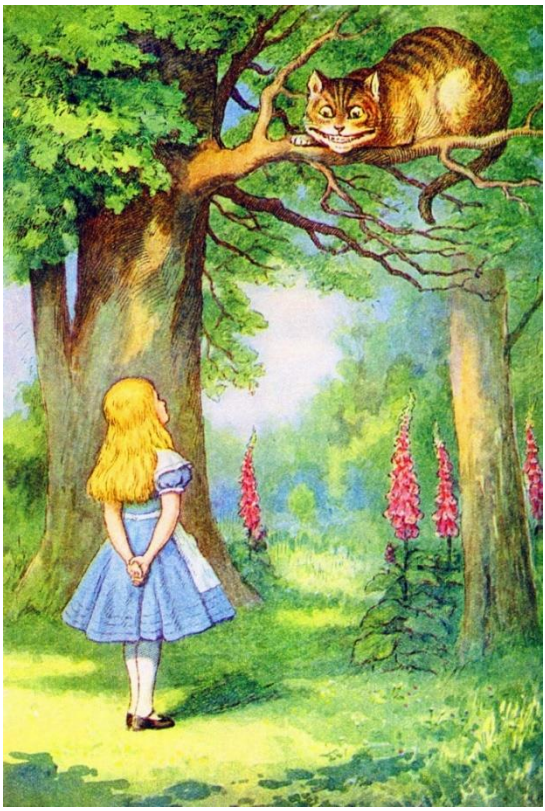


Quine put the following quote from Lewis Carroll at the beginning of his book *Philosophy of Logic* (1970)*:* "Contrariwise, if it was so, it might be; and if it were so, it would be; but as it isn't, it ain't. That's logic."

Philosophical aphorisms could be accompanied/supported by images, but this is not generally the case. However, *Alice's Adventures in Wonderland* is an illustrated book (originally by Carroll himself, but the famous version is with drawings by John Tenniel). The following famous short dialogue

> "Would you tell me, please, which way I ought to go from here?" "That depends a good deal on where you want to get to," said the Cat. "I don't much care where—" said Alice. "Then it doesn't matter which way you go," said the Cat.

has been pictured:



Jacques Lacan claimed that *Alice* was the forerunner of *bande dessinée* (comic strip), see (Estèbe 2001). Two questions arise: is *Alice* a philosophical book? In which sense are the images used in *Alice*?

2. Against Using Images in Philosophy?

This part will critically examine some "reasons" why images have been rejected in philosophy.

2.1. The Illusion of Perception

In Ancient Greece, there was a rejection of *sense data*. In contrast, in Indian civilization, the main alternative beyond appearances is the religious world. In Greece, what was promoted is understanding, knowledge and wisdom, with reason as the primary "tool." Plato is famous for having promoted this

"view" by presenting the visual allegory of the cave, placed between two rational declarative discourses about the rejection of direct perception, one at the end of book VI of *Politeia*, and the other being comments/explanations after the metaphorical image of the cave has been described.[3]

The rejection of sense data does not necessarily mean the rejection of images. For example, in Hinduism, images are widely used to access/express a reality different from what is directly experienced in everyday life. The idea is not picturing reality as we can ordinarily see it but promoting an *imaginary* that supposedly brings us to the "true" reality.

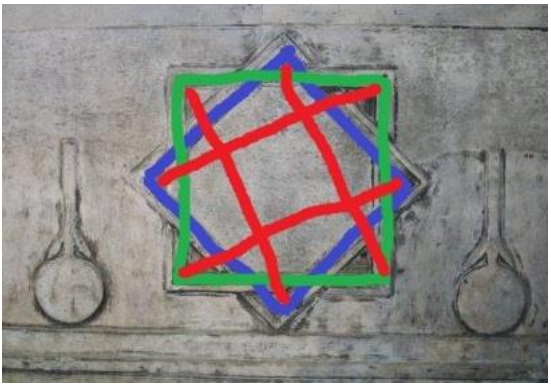
This use contrasts with religions, like Islam and Christian Calvinism, where images are considered human representations, veiling God's true reality. The meaning of the word "iconoclasm" has been extended as a rejection not only of images but of superstitions and ideologies, represented by statues, monuments, ceremonies, and even scriptures.

[3] I did a Master thesis at the Sorbonne on the cave (see Beziau 1988).

Islam, however, does not wholly reject visuality. In particular, there are some plastic artworks and monuments (cf. *The Taj Mahal*), but these "visions" are not *representative*. They are, at best, *indicative*. One of the most famous figures of Islam is the octagon, often presented as the interlacing of two squares. In Calvinism, the pictures were thrown out. The only surviving icon is the "nude" Christian cross, which can also be seen as a geometrical sign, a long vertical line perpendicularly crossing a shorter horizontal one.

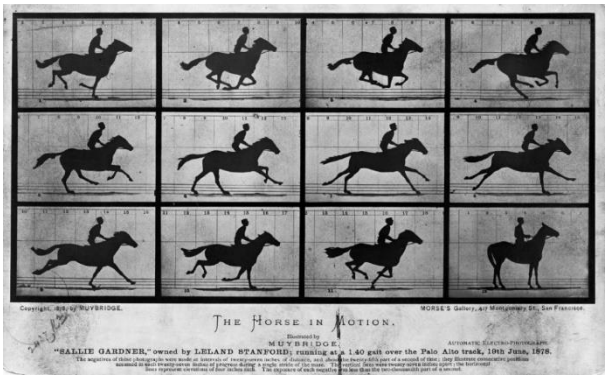
Although Plato rejected images of perception, he promoted abstract mathematical images, like the Platonic solids. Aristotle "designed" the square of opposition,[4] a diagram pivotal in developing the theory of opposition, which includes other geometrical figures: triangles, hexagons, octagons, cubes, dodecahedrons, etc. Catholic Church has adopted The triangle of contrariety to figure the Trinity. It is also possible to consider an octagon of opposition, result of the interlacing of two squares of opposition, fitting with the Islamic tradition:

[4] Aristotle did not explicitly draw a diagram, this was later done by Apuleius and Boethius, but he clearly had this figure in mind, as pointed out by Larry Horn. For recent works on the theory of opposition see (Beziau 2003, 2012), (Beziau/Lemanski 2020), (Beziau/Vandoulakisi 2021).



The above image is made of a photograph I took of an octagon in a wall inside the *Hagia Sophia* mosque in Istanbul upon which I have placed a square of contrariety in blue and a square of subcontrariety in green, tightened together with red lines of contradictions, the origin of the theory of n-opposition developed by Alessio Moretti (2009).[5]

Magritte entitled his famous painting of a pipe *The Treachery of Images*, but picturing reality, by precise drawings or photographs, can help understanding it better, having a "closer" look at it. Photography was used to "see" the actual way the legs of a horse are moving by Muybridge in *The Horse in Motion* (1878).

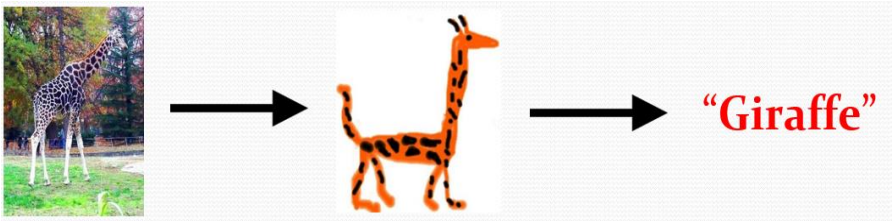


That is nice for exact sciences. Nevertheless, how can images be used to develop philosophy? Can we precisely picture truth, beauty and goodness?

[5] I myself introduced the coloring of the oppositions and put forward the idea to generalize the hexagon of opposition into a octagon of opposition based on the interlacing of squares of contrariety and subcontrariety.

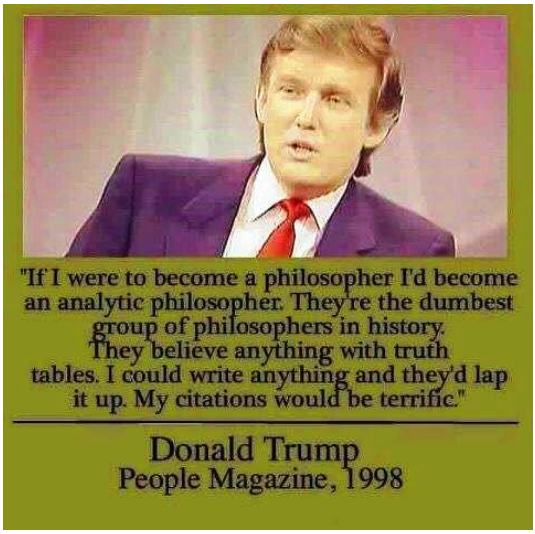
2.2. The Childish Aspect of Images

Another "reason" to reject images is to consider that images are childish. This can be related to simplifying reality, seen as the first step to a more complex understanding. If you want to be able to explain to a child what a giraffe is, then you draw a picture which is a simplified image of reality corresponding to the main features of this animal, allowing us to capture any instance of it, identifying it through the picture, by distinguishing it from other "things." The picture can be seen as a symbolic step towards the arbitrary abstract word, creating a mental image associated with the word.



However, instead of seeing the pictural stage as the first step of our linguistic, cognitive development, we can promote a continuous dialectical interaction between pictures and abstract understanding, not leading to the burning of images, keeping alive our childish dimension, but making it evolves in a more mature stage, developing images in a more sophisticated way. Interestingly, mathematics has "seriously" evolved by the use of symbolism (cf. Serfati 2005), which is closer to ideogrammatic languages like Chinese than to alphabetic languages where there is no direct connection between the signs and meaning.

The famous mathematician Alexander Grothendieck wrote: "Discovery is the privilege of the child: the child who has no fear of being once again wrong, looking like an idiot, not being serious, not doing things like everyone else." (Grothendieck 1983-86). One may think that images are not serious, but is it the case? What is the scientific basis for that, if any? Furthermore, on the other hand, what is the problem with being funny? The expression "comic strip" has linguistically concretized the relation between fun and images. Furthermore, now there are also memes, like the following one:



As Schopenhauer put it, "A sense of humour is the only divine quality of man." Boring adults cease to have this quality.

Two famous children's stories were illustrated with images by their authors, *Alice's Adventures in Wonderland* by Lewis Carroll and *Le Petit Prince* by Antoine de Saint-Exupéry. It is worth pointing out that if these two stories are two of the most famous stories of humanity, it is because they are not only childish… They have a philosophical dimension, being philosophical (story) discourses incorporating images, and it makes perfect sense to study these works in a philosophical class. This is also the case of some famous tales like the story of *Eros and Psyche* and *Little Red Riding Hood*, originally not presented with images but which widely appeal to our imaginary and have consequently inspiring many plastic artworks.

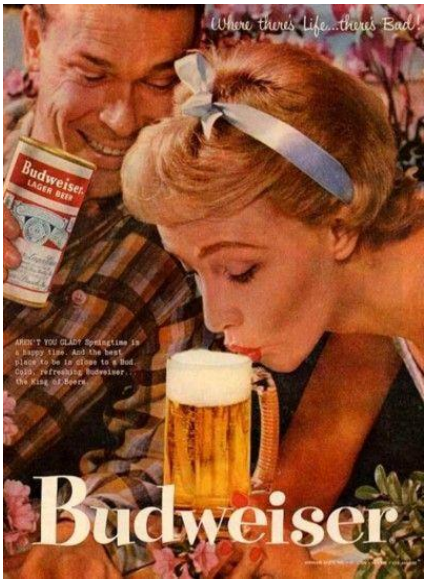
Images may be childish, but the lapidary condemnation of images is infantile.

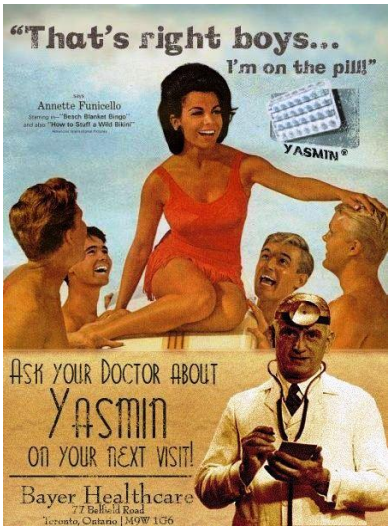
2.3. Advertisement and Propaganda

Advertisement and propaganda use the full power of images. Images are striking. They strike our nerves, our emotions, our desires. They can be very provocative, disturbing and shocking.

A sentence like "A naked woman lying on a sofa is drinking a glass of whiskey," be it spoken or written, has few effects on our mind, nothing shocking there. You can imagine many things… but in fact, you generally imaging quite nothing. Imagination is not fired up by such words. It is much stronger If you see a picture because you jump into reality, or the "reality" of the image makes you jump! If it is a moving image, it can be even stronger. People attending the movie *L'Arrivée d'un train en gare de La Ciotat* by Louis Lumière, December 28, 1895 at the *Salon Indien du Grand Café* were really "moved."

This substantial impact of images can be used constructively or detrimentally. Advertisement images are used to sell products. It can be for good or bad products, and it can be done ambiguously, like using sexual attraction or based on phantasmagoria and promoting illusions.





In communist countries, advertisement was prohibited, but political propaganda used pictures or sculptures. In a country like Morocco, you see pictures of the King everywhere. In Nazi Germany, ideological propaganda was mixed with commercial propaganda (Pamela 2013), and the famous Swastika flag is a strong image that used a religious symbol from India. This flag was pivotal for the development of Nazism. Coca-Cola was "successfully" mixed with the mythical figure of Santa Claus, an explosive cocktail! Images are powerful…

However, images can be used intelligently to promote intelligent things. Advertisement is sometimes very creative. It is not because some advertisers are using the power of images in a bad way that we shall reject advertisement and the use of images in general.

It is not because nuclear physics permits us to develop a nuclear bomb that we reject it. We do not need to throw the baby out with the bathwater. It is more dangerous to travel by car or plane than by walking, but that is not a reason why we should move only step by step…

Conditioning the mind can be for good reasons. Images are pretty strong for acting on our minds and psyche. They are very efficient in deepness and time. That is why they are used in traffic signs (including the power of colours), where promptness is essential and is needed since we are going faster than usual. Images can help avoid danger.

They also are relatively dangerous due to their strength, but that is no reason to reject them completely. We should be careful to use images in a good way; negatively, to avoid hell and positively, to go to paradise. Non-artificial paradise, if any!

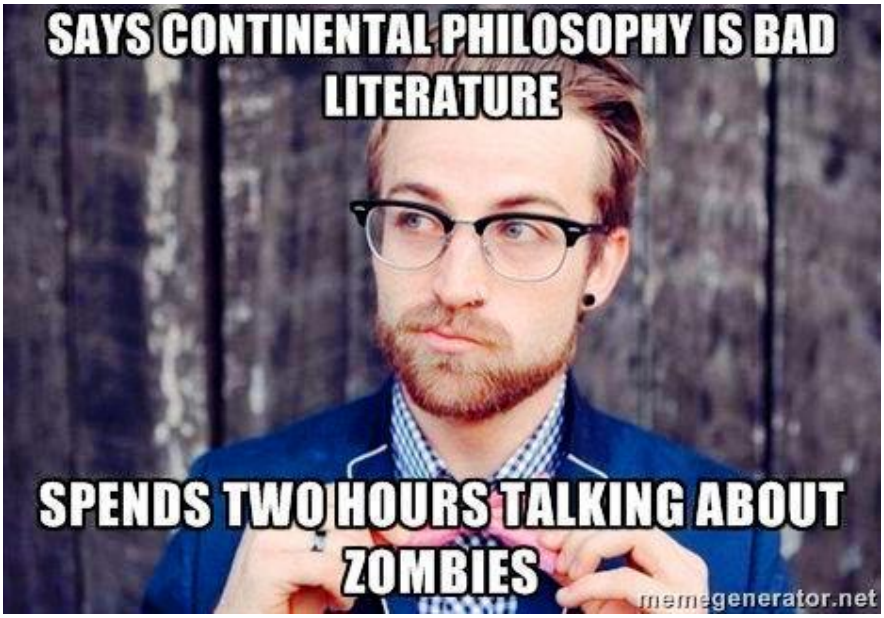
3. Why and How to Use Images in Philosophy

3.1. Good Reasons to Use Images in Philosophy

Images may lead to illusions, but words may lead to something worse: nonsense. A combination of words using correct grammatical rules can lead to something, expressions, or sentences, which is only apparently meaningful, either because it has no sense or/and no reference.

Note, however, that an expression that has no reference may have a sense like "The greatest prime number," contrarily to Frege's theory according to which the sense (*Sinn*) is the way the reference (*Bedeutung*) is given (Frege 1892). Like a classical contradiction, a sentence that is always false is another example of linguistic expression that has a sense but no meaning. However, this is not a sufficient reason to claim that every linguistic expression has a meaning.

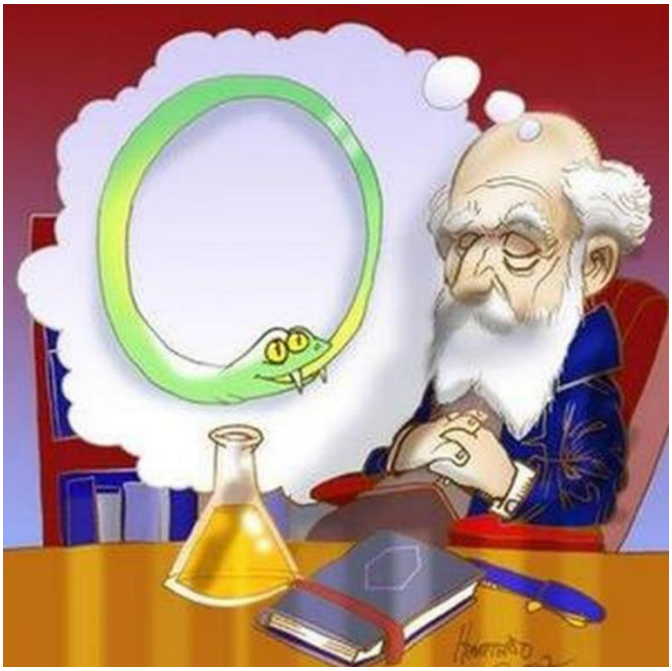
The misuse of language in philosophy was denounced by Wittgenstein, who claimed during a short talk at Cambridge that most of the traditional philosophy has no meaning (Monk 1990). Carnap took up, expanded and diluted this idea in his 1931 *Erkenntnis* paper "The Elimination of Metaphysics Through Logical Analysis of Language."



Philosophy is dominated by words, with a tendency to verbiage and verbosity, which sometimes results in nonsense or/and lousy literature: gibberish, mumbo-jumbo, *baragouin* as they say in Paris, or *charabia* as they say in Marseille. Imaging philosophy, i.e. using images in philosophy, can be a way to escape this and to develop more truthful, fruitful and beautiful philosophical ideas and discourses.

Originally science was part of philosophy. Nowadays, philosophy is not considered a science, even a human science, and most philosophers have a weak knowledge of science. Looking at sciences, we see that it is widespread to use images: in biology, physics, chemistry, economy, computation, history, geography, linguistics, and mathematics... The way they are used varies according to the specificity of each of these sciences. *The Power of Images in Early Modern Science* (Lefèvre et al. 2003) is a fascinating book showing how images were fundamental to developing modern science.

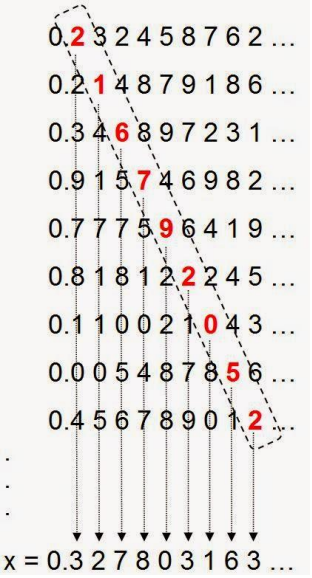
Scientists are using macroscopes and microscopes to have a better view of reality. Meanwhile, philosophers are fluctuating in a sky of cloudy ideas reading the complete works of Hegel, Hanna Arendt or Kripkenstein with triple-focus glasses.



Nevertheless, Einstein did not discover the theory of relativity by looking at the sky with a telescope. Abstract thinking is needed in science; however, images can help to develop abstract thinking, not pictures of reality. Obviously, not all images are pictures of reality. They can be the creation of our mind, that, mixed with reason, can help to understand reality, as was the case with Kekulé, who discovered the structure of the benzene molecule through a dream state image, and claimed: "Let us learn to dream, gentlemen, then perhaps we shall find the truth.... but let us beware of publishing our dreams before they have been put to the proof by the waking understanding." (see Japp 1898 and Rothenberg 1995).

It is essential to consider that one of the most fundamental sciences, used in particular, to explain and transform reality, can be developed using images. In mathematics, images can play a fundamental role, as illustrated by the three-volume book *Proofs without Words. Exercises in Visual Thinking* (Nelsen 1993, 2000, 2015).

Moreover, it is good to remember the motto about geometry placed at the entrance of Plato's academy. Plato valued geometry because it was based on reasoning, and he wanted to promote the use of reasoning in general. If we can perform all kinds of mathematical proofs using images, not only about geometrical objects, but also about infinity, like Cantor's diagonal argument, and all kind of stuff, it seems reasonable to think it is possible to develop reasoning in philosophy using images.



Reasoning in philosophy is not the same as in mathematics, and it has to be understood more broadly. It can be inspired by mathematical thinking and how images are used in the other sciences. However, using images in philosophy is not necessarily restricted to "scientific imaging." Philosophy can develop its own "imaginary."

3.2. Categorization of the Uses of Images

Let us look for categorization of the use of images in any field, either for lectures or writings. First, let us present a pell-mell "qualificative" list of uses of images:

- Descriptive
- Illustrative
- Illuminating
- Demonstrative
- Ostentative
- Fixative
- Characterizing
- Specificative
- Indicative
- Orientative
- Symbolic
- Supportive
- Inspiring
- Interpretive
- Elucidative
- Justificative
- Informative
- Instructive

We can reduce all these aspects to five categories:

Uses of Images	Representative
	Explicative
	Argumentative
	Decorative
	Directive

We will not explain here how to perform/to justify this reduction. The reader can think for herself/himself how to put all of the aspects of the above pell-mell list into this table.

These five categories are supposed to be exhaustive, but they are not exclusive. However, we can make this pentagonal classification exhaustive and exclusive, saying that such or such image is predominantly of such or such category. We can also look for images equilibrating these five aspects.

3.3. Three Examples of the Use of Images in Philosophy

I have developed philosophical ideas for about ten years, giving talks and writing papers using images. It naturally began with drawings and other images, giving talks supported by slides and later on PowerPoint. I did that on various topics: the characterization of human beings, Schopenhauer's theory of love, identity, etc. Later on, around 2005,[6] I started to develop systematic investigations about symbolism and imagination. This study led me to improve using images, in particular, when writing research papers.[7] This section will provide three examples of what I have done, explaining the different uses of images I have performed.

3.3.1. The Symbolic Key for Arbitrariness and the Pyramid of Meaning

Saussure's theory of signs is illustrated by several pictures in the famous *Cours de Linguistique Générale* (1916). Saussure explains the difference between an arbitrary sign and a symbolic sign with the example of "sœur" ("sister) as an arbitrary sign and balance as a symbolic sign for justice.

I have tried to clarify what an arbitrary sign is by looking for a symbol for it. All symbols are not necessarily images. However, I was looking for a symbol with a double aspect, i.e., a symbol that is a pictogram and at the same time represents a general idea through a particular case. As I have pointed out in the paper "Arbitrariness Symbolic Key" (Beziau 2019), this is the case

[6] I wrote papers and edited two books (one jointly with Daniel Schultess (see Beziau, 2015, 2016, Beziau and Schulthess 2020). This activity is connected with three events I have organized: a first one on symbolic thinking at the University of Neuchâtel, Switzerland in 2006, another one on imagination in 2007 in this same university and a bigger one on imagination again in Rio de Janeiro, Brazil, in 2018.

[7] I have already written by now about 30 "imaginary papers" (see e.g. Beziau 2015, 2017a, 2017b, Chantilly/Beziau 2017, da Costa/Beziau 2020).

of balance, as a symbol of justice, and also of the equality sign, as a symbol of identity; these two cases are different from a simple pictogram such as a hieroglyph of a bird or the sinogram of a horse. In this paper, I argue that a key is a good symbol of arbitrariness because it opens doors to something that has nothing to do with it, like the word "sun." Funny enough, the key is metaphorically used in an opposite meaning. For example, the key to happiness is conceived as something capturing the very essence of happiness and consequently leading to it. If you say "sun" to a blind girl, she will not see it.

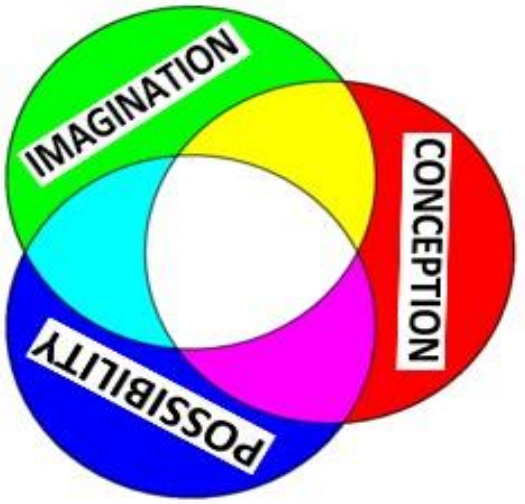
On the other hand, I have developed a quaternary theory of meaning (Beziau 2019), inspired by Saussure's ternary theory, *signe-signifiant-signifié*, where the sign is the two other elements taken together. I consider that besides the ternary triangle *word-thought-thing*, there is something I called a "notion." This "notion" is naturally placed above the triangle forming a *pyramid of meaning*.

This figure is an example of a symbolic image being simultaneously representative, explicative, decorative, and directive. Moreover, it can also be interpreted as argumentative because it strongly supports this new normative theory of meaning. As emphasized by Alfred Korzybski, who was inspired by the mathematician Eric Temple Bell: *The map is not the territory*, but a map can help direct our paths, explore reality, and guide us. With this

pyramidal mapping in mind, we can navigate through the ocean of semantics slippages pointed out by Bréal, the teacher of Saussure and the guy who coined the word "semantics" (Bréal 1897).

3.3.2. Rational and Relational Visual Thinking Applied to Imagination Itself

Following structuralist thinking, impulsed by Saussure's linguistic theory (cf. Granger 1960), according to which the meaning of a sign has to be understood through its relationships with other signs, I have investigated the notion of imagination relating it to two other notions: conceptualization and possibility (Beziau 2016, Beziau 2020). To do that, I have used a Venn diagram, which is an image systematizing the relations between three notions (notions, in the sense of the pyramid of meaning).



Venn diagrams are useful logic maps to develop structural thinking in philosophy. The strength of a Venn diagram is quite significant, and it has been/is used in many different circumstances. It is a logical form representing all the possible relations between three items.

I used this image principally in an argumentative way, defending the idea that none of the "boxes" is empty. I used colours to fix the ideas. At the same time, this colourful Venn diagram, without the concepts in the boxes, is used to illustrate the current theory of colours (with three primary colours and three secondary colours).

Guided by this Venn diagram, I have furthermore used images to develop our understanding of imagination, giving in particular images of things that are imaginable but not possible or/and not conceivable.

Philosophers like Gaston Bachelard (1942, 1943) and Jean-Paul Sartre (1936, 1940) have written about imagination and the imaginary, but images do not illustrate their writings. On the other hand, Carl Jung wrote a book on symbolism illustrated by symbols and many images (Jung 1964).

3.3.3. A Lucky Example of How Images Help to Develop Our Thinking

I wrote a paper entitled "Dice: a hazardous symbol for chance?" (Beziau 2018). The goal of my research was to answer this question.

At first, my idea was that this question deserved a negative answer because I had the impression that the relation between dice-throwing and the notion of chance was the same as the relation between the sand of a beach and the notion of infinity as if a rising quantity would entail a change of quality. The grains of sand are very numerous, not countable in a practical way. However, they are not uncountable in a mathematical sense; their number is indeed finite. Moreover, in the case of dice-throwing, with the law of physics, in principle, it should be possible to know exactly the result, unless we think that *God is playing dice* and physical reality is aleatory.

I completely changed my mind by finding by chance the above picture of two dice on a beach. Since I wanted to emphasize this analogy, I looked for a picture of dice on a beach. Then I found the following image that seems nice to me from an aesthetic viewpoint. I placed the mathematical symbol of infinity in the sky, the idea being to have something at the same time decorative and representative.

Then I realized that the dice in this picture do not correspond to dice used to symbolize chance through dice-throwing. Because in this symbolization, dice are not only physical objects but also mathematical objects, and in the above picture, the physical aspect is too significant. Throwing dice is an image that does not reduce to a picture of reality, although it can be fairly represented by such a picture (note that in the picture below, dice are artificial objects based on mathematical concepts: cube and number):

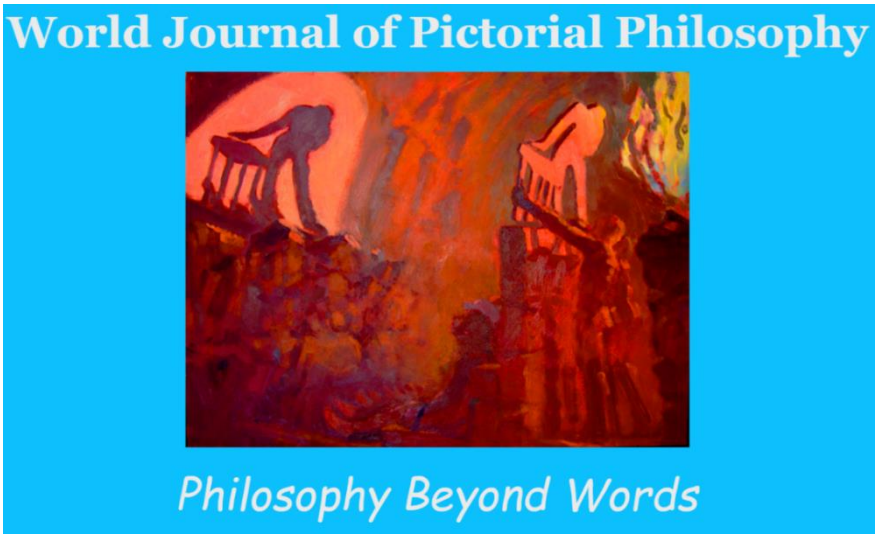
In this paper, I also tried to depict and symbolize the opposite of chance, determinism. This opposition was "naturally done" by the mechanism of a watch. By doing that, I was led to two other pictorial representations of related phenomena: falling in love, different from the chance symbolized by dice-throwing, which is quite absurd by contrast to love that gives meaning to life (different from miracles), not well represented by a rose, that is rather a symbol of something I called "free determinism." Below is the complete picture of these four elements.

These four pictures form a square, which can be seen as a square of opposition between the four notions represented by these images. On the top, determinism as the mechanism of a watch and (absurd) chance as dice-throwing are contrarily opposed: they exclude each other but do not exhaust all the possibilities. Chance symbolized by falling in love is diagonally opposed to strict determinism symbolized by the mechanism of a watch. The two are contradictory, exclusive and exhaustive, similarly to (absurd) chance symbolized by dice-throwing and (free) determinism symbolized by a rose. Moreover, the latter is subcontrarily opposed to chance, symbolized by falling in love. The two are exhaustive but exclusive.

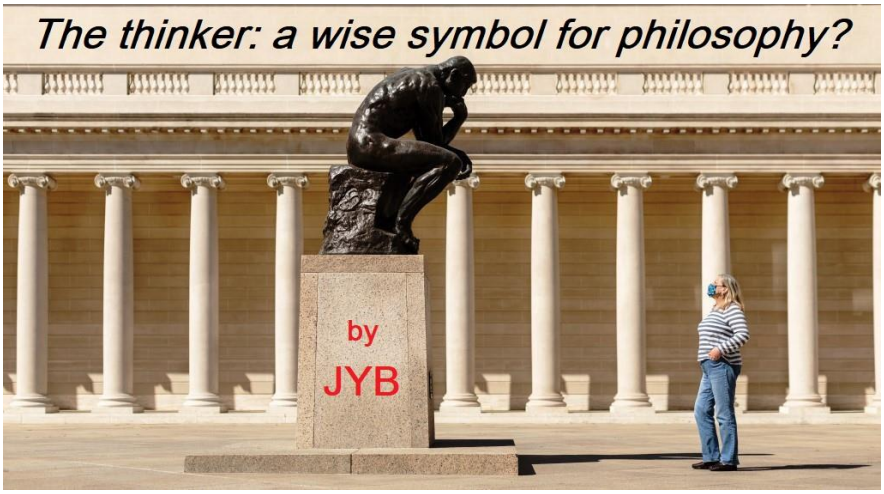
This characterization is a possible way to *picture* the situation. A more sophisticated one would be to use a hexagon (I will do that in a forthcoming paper, "The Hexagon of Chance and Determinism").

4. Future imaginary Projects

I hope this paper clearly shows interesting aspects in using images to develop philosophical thinking, systematically creating oral or written philosophical discourses, including images. The current computational technology provides good support for doing that. I intend to launch a journal in this spirit soon entitled *The World Journal of Pictorial Philosophy* with papers using images.



I also have a project to write myself many other philosophical papers using images, particularly one about the symbolization of philosophy, based on a critical examination of philosophy symbolized by the famous Rodin's sculpture "Le Penseur." The paper's title will be "The Thinker: A Wise Symbol for Philosophy?".



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An Apology for the Obscurity of Philosophical Discourse: the Fruitfulness of Obscurity

Abstract

The article examines the distinctive features of philosophical discourse, such as clarity and intersubjectivity in philosophical communication. The possible reasons for the obscurity of philosophical texts and the complexity in communicating meanings are analysed. It is claimed that the obscurity of philosophical texts and eventual incomplete understanding is not a sign of their inferiority but the fruitfulness of philosophical discourse, which can generate new meanings.

Keywords

Discursive Thinking, Philosophical Discourse, Communication, Language, Clarity, Comprehensibility

> Are you a bad philosopher then, if what you write is hard to understand? If you were better you would make what is difficult easy to understand.
> —But who says that's possible?
>
> L. Wittgenstein

> I do not fit into any discourse, and I have to speak only on behalf of myself and for myself, in presence not of a listener or interlocutor but a eavesdropper: as of I were thinking aloud, without addressing anyone and not demanding a response.
>
> V.V. Bibikhin

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1. Introduction

1.1. The Concept of Discourse

The concept of discourse is distinguished by its semantic depth and blur of its conceptual boundaries: speech, text, the method of text generation, the linguistic context in which a text is created and perceived—all these are called "discourse." Despite the diversity of the "trendy" uses and interpretations of the terms "discourse" and "discursiveness" in various contexts, we can identify some of their most common constitutive features.

Discursive thinking primarily contrasts intuitive thinking and presumes consistent reasoning in concepts and judgments. Discursive thinking is viewed as the opposite of an intuitive instant grasping of the whole. Moreover, discourse is created in a specific semantic domain and designed to generate and convey meaning, i.e., it necessarily presupposes intersubjectivity and communication. Consequently, a necessary attribute of discourse is clarity, understood as objective transparency of meaning, achieved by the unambiguity and accuracy of terms, simple syntax, a coherence of presentation, and possibility for adequate understanding by the communicants, i.e., intelligibility of the discourse by the participants.

In other words, if discourse is speech, then speech must be clear, conceptually and logically correct; if it is text, then it must be coherent and consistent; if it is a method of text generation, then it must be rational. Finally, if it is a language context, it must ensure the participants' effective communication, mutual understanding and interaction.

1.2. Philosophical Text vs Discursiveness

Provided that the expression "philosophical discourse" is quite familiar, why shouldn't it be located among the other kinds of discourse, i.e., political, legal, and even musical and everyday discourse? The specificity of the language of philosophical texts, the peculiarities of communication within the framework of philosophical problems, the method of "gaining knowledge" itself raises doubts about the possibility of philosophical discourse. Moreover, doubts about the discursiveness of philosophy have a lengthy history, which is equal to the history of philosophy itself.

First of all, these doubts concern the principal *expressibility of philosophical truths*. The problem of expressibility embraces the possibility of clarity, consistency, and adequacy of the existing language. Already in antiquity, there were doubts about the possibility of language to express philosophical truths:

> On this account, no sensible man will venture to express his deepest thoughts in words, especially in a form which is unchangeable, as is true of written outlines (Plato, *Letter* VII, 343a; Plato 1997, 660).

Secondly, there are many reservations concerning the problem of communication in the space of philosophical discourse, i.e., the problem of understanding, continuity, conventionality regarding the terminology and structure of knowledge, the postulational character of at least some of the conclusions, the hierarchy of authoritative authors, and other issues. The whole history of philosophy is not a peaceful conversation between speakers of the same language, based on mutual understanding and mutual ideological enrichment, as A.V. Akhutin put it, but rather a dispute of "copyrighted misunderstandings" (Akhutin 2014, 4).

The Russian philosopher V.V. Bibikhin, not groundlessly, opposes the language of philosophy to discourse, calling the latter "creeping" for its methodological consistency. Based on a famous saying of Heraclitus, "Lightning governs all living [things]," Bibikhin develops his idea about the characteristics of philosophical problems and philosophical language:

> living [nature] is governed neither by reasoning nor by creeping discourse but the lightning imperative (Bibikhin 2002, 136 (my translation)).

Consequently, a natural question arises despite this uncommon understanding of the relationship between discourse and philosophical utterance: Is it possible for a philosophical utterance to generate discourse? Isn't the concept of "philosophical discourse" an oxymoron?

Let us consider in more detail the signs of discursiveness concerning philosophy.

2. The Problem of Clarity in Philosophy

2.1. The Requirement for Clarity in Philosophy

The requirement of clarity, transparency for any message, besides consistency, is usually taken for a postulate. Since the goal of any message is to make thought intersubjective, the transparency of the message is a necessary precondition for communication to ensure mutual understanding between the persons taking part in it. The clarity of the uttered statement makes dialogue possible, demonstrating the author's rhetorical skill and his degree of mastery of the material.

The thesis of inadmissibility of ambiguity in philosophical statements is often reinforced by citing Ludwig Wittgenstein' proclamation:

> what can be said at all can be said clearly, and what we cannot talk about we must pass over in silence (Wittgenstein 1974, 3).

Edmund Husserl considered the requirement for clarity to be an imperative of philosophy. The entire history of philosophy, starting from antiquity, seems to stress the need for clarity of philosophical discourse.

Thus, Socrates, striving for maximum clarity and transparency in reasoning, warned his friend Phaedrus in the dialogue of the same name against a common mistake of speakers, which used to lead to confusion and misunderstanding. The problem, in his view, is that people begin to discuss something without prior agreement on its definition, without specifying from the beginning what meaning they ascribe to a concept, groundlessly assuming that they know its exact meaning and everybody shares the same view about it (Plato *Phaedrus* 237c; Plato 1997, 517). Hence, Socrates always starts from the definition of the concepts under discussion when analysing a problem.

Aristotle also emphasises the need for clarity of statements.

> The excellence of diction is for it to be at once clear and not mean. The clearest indeed is that made up of the ordinary words for things, but it is mean (Aristotle, *Poetics*, 1458a 18-20; Aristotle 1984, 5001).

Philosophical reasoning that goes beyond the generally comprehensible maxims of common sense is thus doomed to be incomprehensible. Aristotle suggests a compromise by recommending to mix the "strange" words with "ordinary" ones in order to make a speech "clear and not mean" (Aristotle, *Poetics* 1458a 16-18; Aristotle 1984, 5001) that is, to maintain its depth, without losing clarity:

> A certain admixture, accordingly, of unfamiliar terms is necessary. These, the strange word, the metaphor, the ornamental equivalent, etc., will save the language from seeming mean and prosaic, while the ordinary words in it will secure the requisite clearness (Aristotle, *Poetics* 1458a 32-37; Aristotle 1984, 5001).

Indeed, it is not easy to achieve clarity when expressing complex thoughts. Nevertheless, no degree of complexity can justify the lack of clarity. According to Aristotle, the lack of clarity in reasoning is a fundamental flaw and evidence of poor mastery of speech skills. To approximate clarity, shape

the vague, and complete the unfinished, give form to the indefinite amounts to increase its ontological status and approach the completeness of the Being.

We strive to achieve the utmost clarity and purity of thought by asking questions about the essence of things, the logic and mechanisms of our thinking about things, and the adequacy of our representations of things. More than any other kind of knowledge, philosophy faces the problem of ambiguity.

Unclarity accompanies philosophical texts so often that it has generated the prejudice that all philosophy is principally something incomprehensible, i.e., that philosophy and incomprehensibility are synonymous. Although a bearer of ordinary consciousness shows respect to the incomprehensibility, for instance, of mathematics, he speaks mockingly and dismissively of philosophy that is incomprehensible to him. The following typical sentence vividly expresses the situation: "We are simple people; we have no time for philosophy".

A non-philosopher views the reason for the lack of clarity in the philosophical texts not in his reluctance/unwillingness to understand a specific area of knowledge, but in the belief that the author does not understand the problem, and thereby expounds it confusingly ("being a fool"), or deliberately complicates the presentation in order to demonstrate his exclusivity ("cleverness"), or cheating, hiding its emptiness behind a complex "interweaving of words", or openly fooling the reader by inventing pseudo-problems. That is why a philosopher often hears the following impatient sentence:

> Couldn't it be said shorter? Could you say this in normal human language?

Unfortunately, the reproaches of philosophy for an "unclean game" are not always groundless. Sometimes there is dilettantism, fraud, emptiness, lack of understanding of the essence of a subject under discussion behind the ambiguity. In classical Greek philosophy, one can often find a bitter statement that people often impersonate philosophers who have nothing to do with it. It is not always easy to expose them (for example, in Plato's Dialogues *Phaedrus*, *Symposium*, *Republic* and others). Meaningful inconsistency of texts is often mistaken for complex content, incoherence for complex syntax, pompous pathos for passionate ethical preaching. However, all this has nothing to do with real philosophy and its work or with philosophers.

In order to understand how fair the accusations of obscurity to philosophy are, it is necessary first of all to clarify what *clarity* is.

2.2. Semantic Variability of the Concept of Clarity

Clarity usually means plainness, the absence of ambiguity, the ability to read precisely the author's meaning, transparent syntax, and the use of accepted terminology, generally understandable by the reader. That is, clarity is usually understood as intelligibility. Wittgenstein declares

> For me on the contrary clarity, transparency is an end in itself (Wittgenstein 1998, 22).

However, clarity and intelligibility are not synonyms; on the contrary, in the context of philosophical discourse, they can be opposites. Clarity is the evidence of true meaning, and clarification is a complex set of actions aimed at discovering the truth, bringing it to light. It is known that Heidegger has interpreted the Greek word ἀλήθεια as "unconcealedness," "disclosure," "the state of not being hidden"; "the state of being evident," in contrast to λήθη ("lethe"), which means "oblivion", "forgetfulness", or "concealment" (Heidegger 1972, 70; 1992).

The clarity of truth lies in its openness; clarification removes the veil of obscurity from the truth. Comprehensibility is the openness of the text to understanding; the content and form of its message must correspond to the capacity of the addressee to grasp its meaning. A philosopher strives for clarity but does not aim at comprehensibility, i.e., he seeks to express his thought *clearly* but is not particularly concerned about its *intelligibility*. His text may remain unclear for one reason and incomprehensible for other reasons; it can be just as clear but incomprehensible or clear and understandable. The requirement for clarity does not mean adaptation to the epistemological capacities of the reader; it entirely disregards the perception capacities of the reader.

Clarity concerns the relationship of a statement about a thing with the truth, i.e., clarity is a measure for its truth. The requirement for intelligibility concerns the relationship of the conveyor of a message with his potential receptor; i.e., intelligibility concerns the sphere of communication. Understandability is a prerequisite for successful communication; honesty is secondary here.

If one understands clarity as proximity to the truth and maximum adequacy of an intelligible statement of a flashed thought, then the clearer the statement, the farther it is from the intellectual experience of the interlocutor. That is, the requirement for clarity in the ontological sense (as proximity to the truth) can lead to a decrease in clarity in the didactic sense, that is, intelligibility.

The lack of clarity of a philosophical text must not be the result of haste or ineptness of correctable formulations, not an accidental "side effect" of the complexity of its problems. Unclarity is the essence of the "philosophical affair," the philosophising as a way of interacting with reality and understanding it, the way of life (or mode of existence) of a philosopher, and the pressing tasks he encounters. Although obscurity is not conscious choice or intention, it is an inevitable (and necessary, as shown later) companion of the philosophising.

2.3. The Reasons for the Unclarity of Philosophy

Among the reasons for unclarity, three of them are, in our view, the most important.

A) The idiosyncrasy of the subject matter of philosophy: its principal expressibility. Wittgenstein, who is popular among the lovers of quotation who follow the principle "One hundred most famous philosophical sayings," exclusively for his requirement for clarity, also highlighted the impossibility to follow this requirement:

> There really are cases in which one has the sense of what one wants to say much more clearly in mind than he can express in words. (This happens to me very often) (Wittgenstein 1998, 108).

A philosopher's thought is inexpressible because it is always turned to the roots, the foundations of the Being. The reason for Heraclitus' "darkness" is not his (intentional or accidental) vague manner of expressing thoughts but the thought itself; it is unusually profound and new. As Heidegger expressed it,

> Heraclitus is thus ὁ Σκοτεινός, 'The Obscure,' not because he intentionally or unintentionally expresses himself in a manner that is incomprehensible, but rather because every merely reasonable thinking excludes itself from the thinking of the thinker (i.e., from essential thinking) (Heidegger 1994, 24).

B) The idiosyncrasy of the language of philosophy: the capture of the thought and its adequate perceptibility. It is always questionable to which extent a text expresses an original thought of an author adequately; a text can be poorer or richer than the original thought. Very often, a philosopher painfully feels the imperfection of the capacities of the language for expressing their thought and comes to despair from the unsuitability of the expres-

sive means they have available H.-G. Gadamer recalls that once, M. Heidegger, while reading his text, hit the table with his hand so that the cups rang and shouted: "Das ist alles Chinesisch!"—"All this is some kind of Chinese!" (Gadamer 2016, 56).

After some time, the author's text may seem alien to the author, as if he had nothing to do with it. This phenomenon is partly explained by the idea of Yuri M. Lotman about text (and sign) as a thinking structure. This means that the text, possessing its internal logic, is able not to *follow* the whimsical thought of the author but, on the contrary, *to carry* it, more or less successfully, not to fix and preserve meanings, but to create them. Different readings can reveal different meanings in the text, including those of which the author is unaware, i.e., the author may not understand the meaning of their text, as if they were acting as a medium and speaking on behalf of spirits.

C) The philosopher's loneliness in thought and the possibility of communication. The obscurity of philosophical texts would not be a problem if it concerned only a lay reader. However, a philosophical text often turns out to be unclear not only for an inexperienced non-philosopher but also for another philosopher, causing bewilderment, ridicule, anger, accusations of unprofessionalism, dismissive neglect because neither thought nor language can be shared with somebody else. L. Wittgenstein admitted that

> Almost the whole time I am writing conversations with myself. Things I say to myself *tête-à-tête* (Wittgenstein 1998, 106).

Arguing with predecessors and contemporaries, contradicting themselves, a philosopher seeks and paves their way in the darkness. A philosopher is not a preacher; hence, only what was conceived and thought alone in solitude turns out to be genuine in philosophy.

Philosophical texts are often at odds with ordinary rules of discourse that naturally raise questions. Can the principally volatile and unwarranted philosophical thought in the discourse be understood traditionally? Is it possible to call "discourse" a ragged narrative, replete with unexpected and often unclear metaphors, allusions, author's neologisms, and consisting of happily (or accidentally) snatches of meaning caught up in it? Can the obscurity of philosophical reasoning be discursive? i.e., not only *obstruct the discursiveness* of the text but *create discourse* in a characteristic way of its own?

3. The Clarifying Obscurity of Philosophical Discourse

Although it may seem paradoxical, what is often perceived as "obscurity" of philosophical discourse contributes precisely to the ontological clarification of truth, its adequate expression, and unifies thinkers in a shared space and affair.

3.1. Clarity as Clarification of Meaning (as a Condition for Approaching the Truth)

The obscurity of philosophical texts is often ascribed to the excessive complexity of the language, namely, in the invention of new words, for instance, by M. Heidegger, M.M. Bakhtin, J.-P. Sartre, M.N. Epstein, the abundance of metaphors and allegories, references to other cultural texts (Heraclitus, Nietzsche), in a manner of utterances replete with violations of the rules of academic and even ordinary discourse, such as heavy syntax (Hegel, Heidegger, Levinas), negligence of presentation, inconsistency, repetitions (Mamardashvili, Bibikhin), excessive conciseness, unspoken thoughts, semantic autonomy of fragments (Heraclitus, Bakhtin, Wittgenstein), "oracular" manner of exposition, allowing opposite interpretations (Heraclitus).

A philosopher always strives for clarity. Clarity of meaning is understood as maximal correspondence between what is uttered and thought. For this reason, they invent their terms and use such means as specific syntax, punctuation, and even graphic views. All these features of the philosophical language that, superficially viewed, obscure the meaning, in reality, serve to clarify it.

Let us illustrate it with some examples.

Negligence of Formulations

When reading philosophical texts, an impression of general negligence is often shaped to terms used in occasional or at least loose meanings. This is primarily because the philosopher thinks about hardly definable things, such as the Being, time, life, love, loneliness and others. In this case, a philosopher faces a difficulty (*aporia*): they principally cannot refuse from giving definitions, but at the same time, they understand that no definition will be the ultimate one. Such concepts cannot be definitively defined, and at the same time, one cannot abandon the task to provide definitions. M.N. Epstein sug-

gested calling *infinitions* (a term derived from the words "definition" and "infinity") such non-ultimate definitions that assume infinitely many attempts to define a concept.

> Infinition is an infinitely deferred definition that defines a certain concept and at the same time indicates its indefinability. Infinitions are often used about fundamental, all-defining and undefined concepts (Epstein 2017, 15 (my translation)).

Furthermore, a philosopher often deals not with methodological reasoning but with an instant grasp of meaning, requiring instant fixation/objecttification in a word. They do not have time for rhetorical perfection.

Socrates repeatedly said that he used the first words he came across. (Plato, *Symposium* 199b; Plato 1997, 481). In Plato's Dialogue *Phaedrus*, he confesses his ignorance, bad memory, foolishness, inability to pronounce beautiful speeches (in comparison, for example, with the orator Lysis) (Plato, *Phaedrus* 235c-d, 236d; Plato 1997, 514-515). His student Alcibiades says that, at first glance, Socrates' speeches seem ridiculous and primitive.

> If you were to listen to his arguments, at first they'd strike you as totally ridiculous; they're clothed in words as coarse as the hides worn by the most vulgar satyrs. He's always going on about pack asses, or blacksmiths, or cobblers, or tanners; he's always making the same tired old points in the same tired old words.

But, he says,

> If you go behind their surface, you'll realise that … they're of great—no, of the greatest—importance for anyone who wants to become a truly good man (Plato, *Symposium* 221e-222a; Plato 1997, 503).

Socrates turns everything upside down. He poses questions about what seems to everyone understandable and straightforward before these questions are formulated. He makes unclear what is clear, unstable what is stable, destroys and rearranges the ordinary order of things. Where does the smoothness of the syllable come from, where things lose their place, and the ordinary meaning slips away? However, most importantly, smoothness is not only impossible here; it is not needed at all. An unsophisticated, at first glance, speech is freed from the beautiful in favour of the necessary, from the generally accepted in favour of the particular. It describes the world uncloudedly by linguistic habits as if seen for the first time.

L. Wittgenstein gives a convincing apology for negligence

> A mediocre writer must beware of too quickly replacing a crude, incorrect expression with a correct one. By doing so he kills the original idea, which was still at least a living seedling. And now it is shrivelled & no longer worth anything (Wittgenstein 1998, 108).

Indeed, perfectionism concerning a philosophical text can often lead to the opposite result. Rigorous formulations, an abundance of references, explanations for each comment, extensive reference material, thorough introductions and subsequently, a scrupulously studied and cited historiography of the issue—all this can deprive the text of the necessary energy, dialogism and impulse that encourages contemplation, reflexion. On the contrary, rough, hastily formulated ideas, unexpected allusions, reasoning cut off in the mid-sentence keep the philosophical text alive.

The Author's Vocabulary

In addition to using occasional, "close at hand" words that approximately convey a thought, a philosopher is compelled to invent his language to adequately express his thought since he cannot find an exact match among the existing words. Among the inventors of words are M. Heidegger, A. Bergson, G. Gadamer, E. Levinas, E. Husserl, M.M. Bakhtin, M. Epstein. A student of Heidegger from the USA recalls that in response to his requests to expound this or that confusing terminology of his work in more straightforward German, Heidegger was usually dumbfounded, wholly absorbed in the task. Very often, he remarked with bitterness that it would be better to present everything differently while admitting, at the same time, his incapacity before the task (Gray 1977, 75-76).

Philosophy does not use mechanically existing concepts that have been shaped from the folding of thought about things. Every time, it turns to the things themselves, following a complex and unpredictable path anew, reinterpreting concepts ("phenomenon", "good", "measure"), using them in a new meaning ("presence", "event", "concern", "abandonment"), or creating new concepts ("existence", "Dasein" (Heidegger), "externality" ["vnenakhodimost'"] (Bakhtin), "all-unity" [„Alleinheit"] (V. Soloviev), "chronocide" (Epstein). Analogous words from everyday discourse cannot replace these concepts; we cannot express them in "easier" or even more different ways.

The emergence of new concepts in philosophy is a natural and fruitful process; it evidences a new possibility to look at reality from a different perspective.

The Metaphorical Nature of Philosophical Language

As V.V. Bibikhin claims,

> We do not control the language. Consciousness assigns a meaning to a sign, but then the sign breaks out of the power of consciousness and advances its own life: it gets blurred, bifurcated, disappears, passes into another sign (Bibikhin 2002, 76-77 (my translation)).

Signs turn out to be somehow interconnected not because of rational grounds (etymology, grammatical rules) but due to a suddenly emerging new meaning. These unexpected connections are most often revealed in the metaphorical language of poetry and philosophy.

A metaphor has not only a didactic purpose (how to better explain the meaning of some abstraction by drawing an analogy with something evident) but, most importantly, an ontological status since it indicates the internal connections of phenomena. Moreover, a metaphor connects not just one phenomenon of the world with another; it stitches together entire layers of reality, dissimilar at first glance, reveals the regularities of the general structure, its deep meanings, and thereby helps to view the general coherence and unity of the world. The Heraclitean metaphors of the bow and the lyre not only revealed an unexpected essential similarity of different objects (the degree of tension of the bowstring and the lyre string ensures their functionality) but also served as an illustration of the universal principle of the interaction of opposing forces. His metaphors of Being as fire and time as flow also became famous, thanks to which the most complex "undefinable" (as said above) concepts appear in visible forms.

The rejection of verbalisation and conceptualisation of an abstract phenomenon in favour of a form enables us to understand this phenomenon in all diversity of its aspects, which is irreducible to a definition given the following of all the rules. For example, Heraclitus explains the nature of the cosmos, presenting its various models through metaphorical analogies or codes (cosmos as Logos, cosmos as an oracle, cosmos as a stadium, as a temple, as an organism, etc.) (Lebedev 2014, 59-96).

M. Heidegger and F. Nietzsche often use poetic metaphors to convey meaning adequately. It is known that F. Nietzsche included his poetic works in his philosophical works. Similarly, in Heidegger's works, there are frequent quotes from Friedrich Hölderlin, Georg Trakl, Rainer M. Rilke, which sound like oracles and are subjected to detailed interpretation.

The metaphors used in philosophy are not confined to the verbal form. Thus, M. Heidegger, in his treatise *The Origin of the Work of Art* (*Der Ursprung des Kunstwerkes*), gives us an example of an artistic metaphor for lonely, poor, joyless life, Vincent van Gogh's picture "A Pair of Shoes" (1886)".

Sometimes, to maximise expressivity, thinkers resort to original techniques, combining the usual verbal form of expression with elements of formulas, signs, using wordplay and unexpected allusions. Thus, the Russian philosopher and cultural theorist Grigory S. Pomerants (1918–2013) suggests a definition of a human that resembles a mathematical formula:

> A man in this world is one, divided to infinity (Pomerants 2010).

Philosopher and cultural theorist M.N. Epstein highlights that the essence of a human is the ability to love by resorting to a graphic transformation; he replaces the four letters in the Cyrillic word for "human" (человек—chelovek) with the corresponding Latin letters: che*Love*k (Epstein 2017, 18).

Thus, these examples of using metaphors unambiguously indicate the author's intention to clarify their thought, both in the didactic and ontological senses.

The Author's Punctuation

One reason for Heraclitus' "obscurity" is the omission of connectives. His obscurity created significant difficulties for interpreters. The meaning of Heraclitus's statements often depends on what connective parts of speech put the interpreters of Heraclitus in place of the missing ones (Wheelwright 1959, 13). The lack of connectives was attributed to his illiteracy, negligence, the influence of oral speech and even a conscious desire to make the text inaccessible to the uninitiated (the latter view was held, in particular, by Diogenes Laertius). However, there are grounds to believe that the author's punctuation (more precisely, the absence of punctuation and connective parts of speech) in Heraclitus served an utterly different purpose. According to A.V. Lebedev, the grammatical features of Heraclitus' style have a philosophical foundation. Heraclitus omits the connective "and" (καί) between opposites not because of negligence, as Lebedev claims. The opposites must not be isolated or separated by this καί because they are not autonomous entities but aspects of a single whole. In the language of Homer and Hesiod, opposites are separated, but in nature, all parts are integrated like letters

and syllables in one text, the Logos. Heraclitus omits the copula "be", but, as Lebedev points out, when he speaks of the Logos, space or deity, he uses the copula "be" and omits it when it comes to things that may change. Moreover, Heraclitus uses the definite articles τό, τά only to eternal entities, and avoids using the articles to phenomenal opposites, since the article substantiates a phenomenon, turning it into an autonomous thing (Lebedev 2014, 51-53).

Twenty-five centuries after Heraclitus, we can see examples when philosophers ignore the rules of grammar, spelling and punctuation not because of ignorance but to express their position as clearly as possible. Thus, for instance, one of the features of Wittgenstein's style is the adherence to lowercase letters, the abundance of punctuation marks, the division of the text into paragraphs after almost every sentence. He did it deliberately:

> Really I want to slow down the speed of reading with continual † a punctuation marks. For I should like to be read slowly. (As I myself read.) (Wittgenstein 1998, 95).

The Complex Architecture of Text

In the case of philosophical texts, the reader is often faced with the fact that it is impossible to fit them into the linear format of "normal" narrative of a humanitarian text or the logic and rationality of scientific reasoning; it is impossible to outline them in the form of sequential theses.

Firstly, many philosophical texts tend towards a rhizome, i.e., they have a ramification structure. The ramification of the narrative is due to the ramification of the meanings in philosophising. Reducing the text to monadic ideas would mean resectioning the possible meaning "sprouts," i.e., semantic depletion and distortion. A smooth, grammatically and logically correct narration corresponds to the rules of language, logic, the standard epistemological and rhetorical trajectories. However, the most crucial in philosophy goes beside the rules since it corresponds to the heuristic, intellectual experience of the author.

Secondly, even the possibility of constructing a coherent text is questionable. This has led to another widespread style of philosophical texts: the aphoristic style. Aphorisms have not always the form of minted formulas; they often also bear traces of haste, as if the philosopher was in a hurry to fix an elusive thought in a sketch of the text, and does it for themselves, so that they are not primarily concerned about its completeness, formalisation, leaving a sense of innuendo.

The fact is that a philosopher does not read a report, does not expose a lesson, but enters into a dialogue with the reader, whose task is not to exchange ready-made thoughts but to generate and clarify them together. Innuendos allow for a different continuation, depending on the interlocutor's comprehension and the direction towards which they move. Wittgenstein writes

> Anything the reader can do for himself, leave it to the reader (Wittgenstein 1998, 106).

The scattered notes of M. Montaigne, B. Pascal, V.V. Rozanov, L. Wittgenstein can hardly be combined into a coherent text or distributed thematically. In the case of Wittgenstein, all attempts to categorise his notes give the impression of artificiality and arbitrariness. His philosophical thoughts are mixed with remarks of an everyday nature, but an attempt to separate them showed that within a context containing descriptions of time, mood, references to life events, aphorisms acquired depth and were understood differently. Wittgenstein explains the peculiarities of the stylistics of his texts in the following way:

> If I am thinking just for myself without wanting to write a book, I jump about all round the topic; that is the only way of thinking that is natural to me. Forcing my thoughts into an ordered sequence is a torment for me. Should I even attempt it now? (Wittgenstein 1998, 48).

Indeed, the gravitation towards such a style is an individual feature and not an attribute of philosophical discourse in general. However, firstly, this is a ubiquitous feature, and, secondly, Wittgenstein points out that he could write in a coherent style, only if he were writing a book, i.e., if he were writing *for others*. Likely, a coherent presentation by other authors capable of exposing this coherence is also nothing more than a concession to the reader.

The Author's Style

A.V. Akhutin drew attention to the following paradox: nothing universally significant can be said otherwise than in the author's style, in their language and on behalf of their thought (Akhutin 2005, 502). This is evidenced by numerous examples in the history of philosophy.

The language of M.K. Mamardashvili is distinguished by a bright style that is captivating and annoying. His language has no strict definitions and well-shaped concepts, but many metaphors, symbolic parables, and newly in-

vented words. He was accused of the sloppiness of his language; many complained that it is difficult to get through to the meaning because of the laxity of his language. He used ideas and names familiar to everyone, which became for everyone signs, but in a strange, unexpected sense. The unaccustomed train of thinking, the unusual for the academic style turns of speech, and the unexpected comparisons violated the inertia of perception, caused confusion, indignation, the need to deal with, to object, to say the same thing differently, thus triggering the mechanism of internal dialogue, co-reasoning, and co-thinking.

V.V. Bibikhin's philosophical texts are confusing because they do not have the standard advance of thinking from a problem statement to the conclusions. The same question may appear several times in a text, as if the whole reasoning that followed the formulated question does not contain a final answer and requires renewal of mental efforts again and again, from the very beginning. The text keeps a reader in suspense from the beginning to the end, and the result leaves no satisfaction from the solution of the problem, but a feeling of confusion, *amechania* (embarrassment), which is probably more productive than any ready-made answer.

Does a philosopher consciously shape their style? Can they correct it without the distortion of their thought? It is hardly possible. L. Wittgenstein, recognising the shortcomings of his style (primarily due to the lack of clarity, consistency and comprehensibility), came to a conclusion that

> You must accept the faults in your own style. Almost like the blemishes in your own face (Wittgenstein 1998, 104).

The Flaw of Clarity and the Fruitfulness of Obscurity of a Philosophical Text

As shown, the specificity of the language of philosophical texts is very different from the standard concept of discursiveness. The point is not only that any discourse has a vocabulary of its own, a form of verbal constructions (syntax), semantics and pragmatics. Philosophical discourse is a convincing demonstration that clarity is not always a virtue and ambiguity is not always a disadvantage.

The compromise suggested by Aristotle does not always help achieve the required clarity and preserve the originality and depth of thought. Sacrifices are inevitably needed. An author who wishes to be understood tries to become comprehensible. Thus, he puts his ideas in the Procrustean bed of the

acceptable verbal and mental constructions, narrowing and even distorting their meanings. However, clarity can be proved to be an illusion. The smoothness of presentation, the usage of familiar terms and ways of reasoning may lull the reader's attention. They may miss something new because they are confident that they understand the idea and recognise familiar paths of reasoning and acquainted terms. Bibikhin said that

> A philosophical text requires the same elaboration as a mathematical one [*because philosophy is not less rigorous*—our addition]. The fact that the philosophy of the illusion of clarity is more common than in mathematics complicates the work (Bibikhin 2002, 106 (my translation)).

The tendency for clarity and, thereby, complete comprehension, as an absolute value, would have entailed that the discovered meanings would have been simply preserved in rigid form, without increase or change.

However, what could be more important than clarity for a perceiver? The possibility of dialogue and the possibility of producing new meanings. Dialogue is meaningless if the interlocutors do not understand each other. However, it is equally meaningless if they understand each other completely. It is as if one were talking to themselves. Partial confusion and misunderstanding are not only inevitable but necessary for communication to make sense. As Bibikhin says

> The catastrophe that occurs with my thought in someone else's mind is simultaneously the birth of a new idea in it (Bibikhin 2010 (my translation)).

Thus, unclarity is not inevitable; it is not a defect, a shortage. Even in science that is supposed to be the ideal of rigour and unambiguity, obscurity can be fruitful. Thus, in mathematics, a verbal description of an idea precedes its formalisation; the verbal description may contain ambiguity before its explicit formalisation. However, in this way, the idea, which is not crystallised in formulas and formal definitions, keeps the possibility for constructing alternative explications and models. In the history of mathematics, the revision of the axiomatics of a theory is an often phenomenon. Alternative axiomatics offer different understandings and capturing of the initial intuitions. Thus, the ambiguity of initial insights is proved a fertile environment for the generation of new formal models.

A philosophical text's lack of linearity, discreteness, and internal inconsistency is justifiable and even fruitful. Philosophers are often accused of inconsistency, i.e., that opposite or contradictory statements coexist in their

texts (M.M. Bakhtin, A.F. Losev). This is a problem for those who cite and interpret their texts. Nevertheless, it is neither a problem for philosophy nor a fault for the philosophers.

V.V. Bibikhin, who for a long time served as a secretary of the outstanding philosopher A.F. Losev, typeset under his dictation many of the works of the latter since Losev had very poor eyesight. Thus, he noticed that Losev never crossed out what had been written, although, after a few pages, he could come to the exact opposite statement (Bibikhin 2009). The philosophical text does not capture frozen truths; it reproduces the train of thought. What appears to be an inconsistency of the philosopher is the result of their never-ending effort to find the truth. The "reliability" of philosophical work and the truth of philosophical ideas are *not provided by* strict definitions, formulas, logic, loyalty to school or tradition, the correctness of methodology, techniques, approaches. Strictly speaking, nothing guarantees this "reliability", except for the selfless, tireless, persistent search for the truth and willingness, if mistaken, to start all over again.

3.2. Clarity as Comprehensibility (As a Condition for Communication). Idiosyncrasies of Communication in the Philosophical Community

The creation of one's own philosophy, when there are undisputable authoritative teachers or so many schools to follow, is all the time a start from the very beginning, a rejection or reinterpretation of someone else's experience of explaining the world. However, if every thinker always starts from the beginning and in a new manner, if the thought cannot be shared with anybody else, and understanding is so difficult to be achieved, then a question naturally arises: how is communication in philosophy possible? Is it possible? To whom the philosopher's messages are addressed? Do they have an addressee? Is there consistency in the history of philosophical thought, or is it a series of lonely thinkers?

Let us begin with the famous warning of Aristotle

> Piety requires us to honor truth above our friends (Aristotle, *Nicomachean Ethics*, 1.4 1096a 15; Aristotle 1984, 3725).

The philosophers often acknowledge the loneliness of a thinker in their search for the truth.

> To walk alone along a lonely street is part of the philosopher's nature,—notes Nietzsche.—His gift is the rarest gift of all, the most unnatural one in a certain sense, exclusive and hostile even toward others with similar gifts (Nietzsche 1962, 66).

L. Wittgenstein reflected on his loneliness in philosophy and the problem of apprenticeship by asking the following question:

> Is it just I who cannot found a school, or can a philosopher never do so? I cannot find a school, because I actually want not to be imitated (Wittgenstein 1998, 87).

It is impossible to share the semantic universe of another: they have a unique history, a code, a language of their own. It is impossible to extract and take over shaped meanings from someone else's text, but it is possible to discover the meanings introduced in the field by someone else's text, be inspired by someone else's text, and enter into a dialogue with them.

Reflecting upon the reasons for the radical difference in the philosophical patterns of truth, A.V. Akhutin insightfully notes

> Maybe the principal difference of philosophical minds does not indicate an inability to tune in thought to the truth but, on the contrary, clarify something in the structure of the truth itself? Maybe another philosopher says something else because maybe the truth itself—the "sophia"—is *always something else*? (Akhutin 2014, [not paginated] (my translation)).

Eventual misunderstandings due to the principal difference of the philosophising minds and even the conflicts thus generated are evidence of the truth's tacit completeness and depth. The ideas do not remain unchanged in transmitting from one mind to another. They continue to induce thoughts, transform the minds into which they fall, and transform themselves. Each thinker paves their way, insisting on them by engaging in polemics with the others. In A.V. Akhutin's words,

> [Every philosopher] saves the truth from another philosopher (Akhutin 2021, 56 (my translation)).

However, the most important thing is that they find their path because polemics are possible. Dialogue is possible because there are other philosophising minds. By daring to express themselves, a philosopher expects neither unqualified acceptance nor complete understanding. They hope only that their thought will be encountered by the thought of somebody else.

What unites philosophers if they are separated by thought, language, commitment to truth, and not school or tradition? If all philosophy is a ferocious debate and cacophony of divergent opinions, and school and apprenticeship are impossible, then how is discourse possible in the sense of communicative interaction?

If we understand the history of philosophy, not as a collection of ideas that belong to concrete "authors" or philosophising minds that do not have views in common but only shared responsibility for the truth, then precisely this shared responsibility, common cause, the common task will be what forms the philosophical discourse.

The internal unity of philosophical discourse is created and maintained by the tension of thoughts of everyone engaged in this shared space of philosophical problems. The unity lies neither in the agreement with the answers nor in the tension created by the questions. The internal coherence of philosophical discourse is provided not by the clarity and consistency of reasoning but by the feeling of a "common cause", the dialogic nature of the essence of philosophy.

Conclusion

We have grown up in the tradition of European rationalism so that we value coherent reasoning with a "beginning" and an "end", the logical and consistent, presupposing its perception by the interlocutor or listener, intended for the possibility of understanding. Nevertheless, Wittgenstein's famous declaration should not be understood so that only what is clearly said has meaning and value, and everything that is not transparent, not entirely logical, should be scornfully rejected.

A philosopher does not consciously strive for ambiguity and does not accept ambiguity as a norm. On the contrary, they try to clarify everything that concerns their thought, whatever their research view is directed at, which causes their admiration. The omnivorousness of their interest in the world does not recognise other people's judgments on what "should keep silence." A philosopher does not complete what their predecessors started, does not attach their brick to a shared building, but starts from the beginning, from the chaos. They need the order created by others as an example of the *technology* of building order, as an *experience* of separating constructive elements from the spontaneity of the world, as a *source* of inspiration and new questions. Embedded in the primordial chaos, they search for a light of their own, in the way of adjusting a brick to another brick in an unsettled and

uninhabited before them world, making mistakes, getting confused in syntax, trying new words. The obscurity of the emerging text may indicate insufficient interpretation, the failure of attempts to penetrate the depth of meaning. However, the darkness of philosophical discourse is like the life-giving chaos, and the obscurity that it inevitably contains can be the keeper of implicit meanings and even their generator.

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Styles of Education: Kazimierz Ajdukiewicz and Paulo Freire

Abstract

This paper provides an analogical analysis of the educational styles of Paulo Freire and Kazimierz Ajdukiewicz. Although it seems they do not have much in common, we have found some striking similarities regarding, above all, their attitude towards the foundation of education and the deep, abstract structure of human/social relations. Consequently, in this paper, we posit that accurately (pragmatically) organized education in logic is necessary for any dialogical approach to education and social life.

Keywords

Education, Logic, Dialogue, Paulo Freire, Kazimierz Ajdukiewicz

Stultification *is not an inveterate superstition;*
it is fear in the face of liberty. Routine is not ignorance;
it is the cowardice and pride of people who renounce
their own power for the unique pleasure of
affirming their neighbor's incapacity.
Jacques Rancière (1991)

Kazimierz Ajdukiewicz and Paulo Freire were two exquisite 20th-century thinkers from very different backgrounds who nevertheless share many similarities in their ideas on education. Freire was one of Brazil's most renowned representatives of the Pedagogy of Liberation, while Ajdukiewicz was a distinguished philosopher from the Lviv-Warsaw School. The former

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was connected with the dialogical Latin-American tradition, and the latter was an analytical philosopher *par excellence*. However, both can be considered classic representatives of horizontal structures within education and culture in general, as thinkers who saw that education is the only possible way of bringing about positive, lasting change in society. While Freire emphasized the role of dialogue, Ajdukiewicz assigned logic a central role in education. However, in the deeper structure, their approaches are fundamentally dialogical—i.e., concerned with anti-irrational/biophilic organization, and this is what we want to posit in this paper.

The essential characteristics of the Lviv-Warsaw School are firstly an attitude characterized by intellectual honesty, clarity of language, and philosophical analysis, and secondly, a sense of mission and the importance of philosophical endeavours. The founder of this outstanding Polish philosophy school, namely Kazimierz Twardowski, never forced his disciples to follow his interests, ideas, or conceptions; he encouraged every one of them to develop their talents, skills, and opportunities. This attitude explains why the members of the Lviv-Warsaw School include logicians, methodologists, historians of philosophy, ethicians, and phenomenologists, as well as people of different backgrounds, religious beliefs, genders, and specialities.

One may say that Ajdukiewicz was a "freedom fighter" on every possible occasion—he was on the frontlines of three major conflicts, took part in the underground teachings during World War Two, and was dubbed "Casimir the Magnificent" (Polish: *Kazimierz Wspaniały*) during his presidency at the Poznań University. Let us also emphasize that Ajdukiewicz created a Logical Empire in Poland's harsh post-war Stalinist era.[1]

Paulo Freire represented the Liberation movement in Latin America and faced enormous challenges from childhood: he experienced malnourishment, hunger, and poverty; and later in life, he also suffered political persecution. It is worth mentioning that already, as a child, he promised to sacrifice his life to improve the lives of poor children and dreamt about a future where no child would experience famine. They both overcame all their life

[1] From 1945 to 1953, Ajdukiewicz held the position of professor at the University of Poznań, first as Head of the Department of Logic and Methodology of Science, and finally, as a Rector of the University (1948-1952). By *Logical Empire* we mean a large group of prominent scientists created by Ajdukiewicz during this difficult postwar period. It comprised of over a 100 researchers working creatively in all areas of logic, broadly understood, including formal logic, logical semiotics, and the methodology of science, including: Roman Suszko, Maria Kokoszyńska-Lutmanowa, Henryk Mehlberg, Seweryna Łuszczewska-Romahnowa, Stefan Swieżawski, and Ludwik Borkowski.

challenges with great success and left us with legacies still relevant today. They have inspired many generations of thinkers and projects to be implemented and developed in various contexts, especially education.

In the paper, we focus on an analogical analysis of the educational styles of Ajdukiewicz and Freire, based on their canonic works, like the former's "Pragmatic Logic," his textbooks, and articles on the topic, and the latter's two books "Pedagogy of the Oppressed" and "Por uma pedagogia de la pergunta." We present the essential elements of both conceptions to show that Ajdukiewicz's fight against irrationalism bore many similarities with Freire's fight against the 'banking' concept of education.

1. Pragmatics: Generative Themes Adapted to Circumstances

One of the main topics of Paulo Freire's pedagogy is the notion of "generative themes." The basic idea is to get students involved with real-life problems, things that concern them, things they encounter in everyday life: at school or work, or in their professional, political, social, and private lives.

He wrote: "The starting point for organizing the program content of education or political action must be the present, existential, concrete situation, reflecting the people's aspirations. Utilizing certain basic contradictions, we must pose this existential, concrete, present situation to the people as a problem which challenges them and requires a response—not just at the intellectual level, but at the level of action" (Freire 1996, 76-77).

The same idea was behind Ajdukiewicz's project and the posthumously published book *Pragmatic Logic*. This excellent work, edited by H. Mortimer and K. Szaniawski, provides an example of his always innovative, profound, and independent thinking and is simply a highly original logic textbook. It consists of 460 pages and, interestingly, only 43 of these are devoted to the deductive sciences, while nine pages cover formal logic and consequence relations.[2] Ajdukiewicz is a precursor of the contemporary revolution in logic, namely, the so-called *practical turn*.

[2] "The main core of elementary logic. i.e., logic in the narrower sense of the term as the discipline which lists and systematizes all the schemata of deductive inference (and the underlying logical tautologies), seems to be less important for the teacher. This is so because in everyday thinking he encounters only those cases of inference which follow very simple schemata of deduction, and then the wealth of other schemata, listed in formal logic, finds application but rarely. Hence it does not seem worthwhile to burden the teacher's memory with them." See (Ajdukiewicz, 1974: 3-4).

Moreover, he claimed that pragmatic methodology should always aim to understand clearly and fully what science is by discovering and describing why some scientists' attempts turn out to be successful (and valid) and why, in contrast, the community considers others as unsuccessful (and invalid). His article, which deals with the procedures of defining, is, in his own words, an example of an "insight-oriented" study.

It is worth noting here the opinion of Jerzy Giedymin on Ajdukiewicz's involvement and his comprehensive perspective: "But the important point is that throughout his whole life Ajdukiewicz took a keen interest in practical, moral and political issues […] and spent a vast part of his time and enormous effort on teaching, reforming curricula […], analyzing methods of teaching […], organizing research and organizing regular symposia and conferences […]. His activities in this area in post-war time created an exceptionally favourable atmosphere for logic-based philosophy. […] His retirement did not alter his pattern of life. Until his death, he was popular and respected. In turn, he enjoyed his role and position. By contrast, he returned from his tour of the United States and Britain […] rather depressed and disappointed by factional squabbles among philosophers and by the erosion of the sense, so strong in his own generation, of participating in a worthwhile, universal philosophical enterprise" (Giedymin 1974, 193).

Ajdukiewicz supervised many logic courses for students (tailored to the humanities, mathematics, natural sciences, *et cetera*) for different age groups and professions—even for officials and clerks. Ajdukiewicz strongly believed that the permanent development of an anti-irrationalist standpoint always strengthens a person's autonomy and independent thinking. We had the honour and pleasure to speak about Ajdukiewicz at many international congresses, gave lectures and talks to quite broad audiences. When we claimed that this is a unique program of social reform based on properly organized education in logic, we never heard about any similar project anywhere else in the world. Instead, what we heard was always a somewhat loud gasp when we spoke about the idea of a simple, sensible, practical, obligatory course in logic that would result in the anti-irrational, i.e., rational bureaucracy.

Therefore, like Freire, Ajdukiewicz believed that a clear and practical goal is a fundamental value and a necessary condition in the practical organization of education, work, and social life. Freire wrote: "It is to the reality which mediates men, and to the perception of that reality held by educators and people, that we must go find the program content of education. The investigation of what I have termed the people's 'thematic universe'—the complex

of their 'generative themes'—inaugurates the dialogue of education as the practice of freedom. The methodology of that investigation must likewise be dialogical, affording the opportunity both to discover generative themes and to stimulate people's awareness regarding these themes" (Freire 1996, 77-78).

2. Interpersonal Problem-Solving: Effective Social Dialogue

Both thinkers focused on problem-solving. Freire criticized the banking model of education, which is based on the metaphor of students as empty bank accounts that only receive information. It creates uniform individuals that are perfect elements, perfect cogs in the machine. Obviously, in consequence, no intellectual creativity is required; it is discouraged to the point of conducing to, in Freire's words, "castration." Banking education is based on imitation, repetition, and following the rules. It is highly irrational, as it does not even formulate goals; it just introduces algorithms and kills creativity and any critical reflection.

The educational style of Kazimierz Twardowski influenced Ajdukiewicz—the founder of the Lviv-Warsaw School and, in our view, the most successful philosophy educator and organizer in Europe (at least—we dare say). He encouraged all his disciples to follow their interests and always be experts both in their philosophical field and in the particular research domain that would become their speciality. Thus, for instance, if somebody wants to become a philosopher of language, they should also study philology; if they want to specialize in the philosophy of science, they should also major in mathematics, physics, *et cetera*. They should be focused on solving problems and always study how others have already approached the issue; however, their goal is to propose their unique solutions. Teamwork was based on critical thinking and cooperation. Precisely this imperative is what Freire emphasized when he suggested that his methodology "requires that the investigators and the people (who would normally be considered objects of that investigation) should act as *co-investigators*. The more active an attitude men and women take regarding the exploration of their thematics, the more they deepen their critical awareness of reality and, in spelling out those thematics, take possession of that reality" (Freire 1996, 87). He also highlighted this problem-solving attitude when he wrote: "The task of the dialogical teacher in an interdisciplinary team working on the thematic universe revealed by their investigation is to 'represent' that universe to the people from whom they have first received it—and 'represent' it not as a lecture, but as a problem. […] And critical perception cannot be imposed. Thus, from

the very beginning, thematic investigation is expressed as an educational pursuit, as cultural action" (Freire 1996, 90-91, emphasis added). In this context, let us recall his foundational remark: "Authentic education is not carried on by "A" *for* "B" or by "A" *about* "B," but rather by "A" *with* "B," mediated by the world—a world that impresses and challenges both parties, giving rise to views and opinions about it" (Freire 1996, 74).

In order to briefly present Ajdukiewicz as an analytical philosopher who was focused on problem-solving and who at the same time was co-investigating these issues with his collaborators and colleagues, let us mention some of his philosophical achievements. Most importantly, he held that when we learn logic, we practice the art of logical thinking, but we also come to know certain connections between facts, which constitute the logical structure of the world. Ajdukiewicz elaborated his philosophical conception under the name of radical conventionalism. He improved upon Łukasiewicz's classification of kinds of reasoning. He was a precursor of erotetic logic, and among other things, he made an expert analysis of interrogative sentences and introduced a helpful distinction between questions that require resolution and questions that require completion. He conducted an independent critique of specific primary formulations of reism (elaborated by his great friend and fellow philosopher—Tadeusz Kotarbiński). In a masterful polemic with Marxism, he showed that it is not true that every change implies a contradiction. Ajdukiewicz worked on the problem of definition from all angles. He made a fundamental contribution to categorial grammars, discovering a transparent way to index the syntactic categories of linguistic expressions.[3] He showed the difference between correct speech and correct reasoning, indicating that correct reasoning is in accord with the connections that occur in reality and are not dependent on human decisions or customs. He emphasized that every infallible schema of inference is based upon a logical assertion that asserts a particular objective connection between states of affairs.

In the context of the problem-solving attitude, we should point out the distinction made by Freire between a challenge and a stimulus. A challenge would correspond to the problem-solving attitude as the basis of the pedagogy of liberation, while a stimulus is characteristic of the educational banking system. He explains that human beings should always treat problems as challenges, as limit-acts, questions that require answers, new creative solu-

[3] The first structural grammar drawn up in a precise and complete way was Ajdukiewicz's grammar presented in 'Die syntaktische Konnexitaet', *Studia Philosophica*, 1 (1936), pp. 1-27.

tions. Problems are historical, human, typical situations that enable growth and discovery or even pushing the limits. In contrast, a stimulus is ahistorical, connected with the animal world when the only possible attitude is to adapt, not question anything. Therefore it does not call for creative, critical thinking, or any awareness to overcome the limitations of reality. This distinction was perfectly described in many masterpieces. However, we would like to single out Orwell's *Nineteen Eighty-Four*. In his fictional dystopia, any revolt is ultimately impossible, critical thinking is considered a thought crime, and language in itself makes it impossible to perceive any problem as a challenge. Based on the punishment/reward dichotomy, any system treats every problem as a simple stimulus with a prescribed algorithmic response. In this context, we need to remember that Freire follows Veira Pinto in considering that "limit-situations" are not "the impossible boundaries where possibilities end, but the real boundaries where all possibilities begin"; they are not "the frontier which separates being from nothingness, but the frontier which separates being from being more" (Freire 1996, 80).

This approach is to a certain extent compatible with the distinction made by Gustave Thibon, which posits an essential difference between harmony and balance. Harmony is qualitative, based on divergent/convergent points of view, going into the direction/goal/ideal, following a similar hierarchy of values, and gladly accepting any contribution to solving a given problem. In contrast, balance is quantitative, measuring the same amount to unify and eradicate all distinctions. The results are the opposite. Harmony is alive, vibrant, and based on abundance, while balance leads to a total lack of creativity and stagnation to annihilate any differences. In a sense, it corresponds to what Freire calls biophilic and necrophilic approaches, respectively.

3. An erotetic pedagogy

Although considered from a very different perspective, the theory of questions is one of the main contributions to education made by both Ajdukiewicz and Freire. Following the principle from Rancière's quote mentioned above, we should judge people by their questions rather than by their answers.

Ajdukiewicz was one of the first to inspire the study on erotetic logic, i.e., the logic of questions. His paper on interrogative sentences from 1938 started an illustrious tradition in Poland, which later spread abroad.[4] As we

[4] Let us mention at least some developments of Ajdukiewicz's ideas within the theory of questions: Tadeusz Kubiński (systems of logic of questions), Jerzy Giedymin (presuppo-

mentioned above, in this groundbreaking paper, he introduced, among other things, a fundamental distinction between questions that require resolution and questions that require completion, the classification of questions and answers, and the definition of the positive and negative suppositions of a well-formulated question. In a similar vein to Józef M. Bocheński, who, at the end of his life, in the text "Advice of the old philosopher," following G. E. Moore, wrote as the seventh piece of advice: "Before trying to find the answer to a question, ask yourself: what kind of question is this? Empirical, linguistic, logical, etc.", so thanks to Ajdukiewicz we can answer this fundamental question about questions.

At the same time, questions are connected with the topic of authority. Again, Ajdukiewicz, like many renowned analytic philosophers, was a master in the art of questioning, even the most "sacred" authorities. Like, for example, Russell (in "A Liberal Decalogue"), the fifth commandment says: "Have no respect for the authority of others, for there are always contrary authorities to be found." Similarly, the very last, the tenth advice, according to Bocheński also reminds us that: "[j]ust like in every science, authority is the weakest argument in philosophy. Hence, the following advice: be distrustful towards the assertions of others, in particular of popular philosophers; verify them for yourself before admitting them."[5] Of course, we can find already in Schopenhauer's *Eristic Dialectic* that the argument from authority *argumentum ad verecundiam* is one of the weakest since it is, in fact, a logical fallacy. Nevertheless, if we think about the whole banking system of education, any system of oppression, and many irrational attitudes, are based on authority or even on an absolute, i.e., unquestionable, authority.

Therefore, it is no surprise that the title of one of the monumental works by Freire (the co-author is Antonio Faundez) *La pedagogía de la pregunta* (1985), was translated in 1992 as *Learning to Question: A Pedagogy of Liberation.* This book was written—understandably in a natural way—as a dialogue to show how to overcome the banking, mainstream education system, which involves teachers attempting to deposit information "into" students, i.e., passive, empty "accounts." It emphasizes the role of knowing how to ask questions, and while this seems obvious and easy, history shows that it is one of the most difficult and, at the same time, essential skills. Freire and

sitions of questions), Leon Koj (the problem of justification of questions), Robert Leszko (the theory of numerical questions), Andrzej Wiśniewski (inferential erotetic logic, erotetic reducibilities, erotetic search scenarios), and Piotr Leśniewski (erotetic reducibilities).

[5] Translation by A. Rostalska.

Faundez claimed that knowledge is usually reduced to knowing answers, whereas in reality, curiosity and awareness are based on knowing the fundamental questions, and most importantly, on knowing how to question. Freire said that mainstream education consists in giving ready-made answers without even formulating questions. It is to be noted that the title of a Spanish version of the book is: *Por una pedagogía de la pregunta. Critica a una educación basada en respuestas a las preguntas inexistentes*, which can be translated as: *Towards a Pedagogy of the Question. A Critique of Education Based on Answers to the Non-Existent Questions*.

Moreover, Faudez and Freire agree that the very basis of democracy is questioning "é profundamente democrático começar a aprender a perguntar" (in English: "to start learning to ask questions is deeply democratic" Faudez, Freire 1998, 24). In this context, it is worth mentioning that a similar approach to education was developed among others by Ann Margaret Sharp and Matthew Lippmann; in the Latin American context by Ernesto Cardenal, in a Solentiname community; in Poland by the outstanding pedagogue Janusz Korczak, and by the author of "The Spirit of Solidarity"—Józef Tischner. Therefore, our attention should be drawn to the fact that people who worked with illiterate adults in Brazil or Mozambique; educators from the United States of America; a doctor who died with Jewish orphans in a German concentration camp; and the spiritual leader of Polish shipyard workers fighting against the communist regime all came to a very similar conclusion, especially about the role of dialogue—built on well-formulated questions concerning the present, existential and concrete situation.

4. Revolutionary Responsibility: The Pursuit of Social Reform through Education

All the authors mentioned above called for non-violent, i.e., dialogical, anti-irrational revolution through properly organized education, and they felt sincerely obliged to act within their communities. Their mission, very closely tied to their local, concrete conditions and a strong sense of responsibility, and maybe even surprisingly hopeful in such difficult situations, are in stark contrast with so many cynical attitudes. They were all quite shocked—or would have been shocked if they had had the chance to witness it—by the success, long-lasting legacy, and universality of their work. For instance, Tischner and Freire explicitly expressed their amazement at the fact that there were so many immediate translations of their works, and so many

surprising—i.e., unplanned—applications of them, primarily as they were written in the heat of the moment, for particular audiences, describing very particular—if not unique—historical, economic, or social contexts.

At the same time, it is noteworthy that, for instance, Ajdukiewicz, on the one hand, underestimated his achievement and felt quite depressed by what he saw in the best universities in Great Britain and the United States at the time. He spent the final stage of his life mainly in Warsaw. Paradoxically, this was the period of the most significant recognition of his work, full of invitations from the best universities in Europe and the United States; however, it turns out that it was also a time of deep disappointment. Even in retirement, he continued to work very hard, actively participating in Poland's intellectual life and joining international scientific organizations. Jerzy Giedymin recalled that Ajdukiewicz was devastated when he returned from the United States and Great Britain. "By contrast, he returned from his tour of the United States and Britain (in the late 'fifties, I think) rather depressed and disappointed by factional squabbles among philosophers and by the erosion of the sense, so strong in his own generation, of participating in a worthwhile, universal philosophical enterprise" (Giedymin 1974, 194).

Freire held, like Tischner, that every authentic, genuine dialogue is already a revolutionary event. Moreover, "Pedagogy of the Oppressed" specifically addresses radical thinkers, whom he contrasts with sectarians. In the Preface, he wrote: "This volume will probably arouse negative reactions in a number of readers. Some will regard my position vis-à-vis the problem of human liberation as purely idealistic, or may even consider discussion of ontological vocation, love, dialogue, hope, humility, and sympathy as so much reactionary 'blah.' Others will not (or will not wish to) accept my denunciation of a state of oppression that gratifies the oppressors. Accordingly, this admittedly tentative work is for radicals. I am certain that Christians and Marxists. But the reader who dogmatically assumes closed, 'irrational' positions will reject the dialogue I hope this book will open." (Freire 1996, 19, emphasis added). Freire sees sectarians—present across the political spectrum—as people who suffer from a lack of doubt, people closed in the circle of certainty, who cannot enter into dialogue or carry out the pedagogy of the oppressed. As such, they end up "treating history in […] a proprietary fashion, [they] end up without people—which is another way of being against them." (Freire 1996, 21). He also pointed out that the essence of dialogue, as a human phenomenon, is *the word*, understood as two-dimensional, i.e., containing reflection and action, at the same time, "in such radical interaction that if one is sacrificed—even in part—the other immediately suffers.

There is no true word that is not at the same time a praxis. Thus, to speak a true word is to transform the world" (Freire 1996: 68). It must be noted that, according to Freire, the sacrifice of action results in verbalism, whereas the effect of sacrificing reflection is activism. Therefore he posits the following equation *word* = *work* = *praxis*. A similar analogy between speech and work can be found in Tischner's "The Spirit of Solidarity," where he considers work as a particular type of dialogue.

On the relation between theory and practice, Garza Camino wrote that Freire's: "pedagogy at its best is neither training, teaching method, nor political indoctrination. [... it] is not a method or an a priori technique to be imposed on all students but a *political and moral practice* that provides the knowledge, skills, and social relations that enable students to explore the possibilities of what it means to be critical citizens while expanding and deepening their participation in the promise of a substantive democracy" (Garza Camino 2021, 3).

5. Conditions of Dialogue

5.1. Dignity

According to Freire, the most pervasive model of human relations is the opposition oppressor-oppressed. This opposition results in two dehumanized visions of the human being. Moreover, this opposition is often long-lasting, as even in revolutions (we mean any revolution that is non-dialogical, i.e., entails violence), change is limited to merely switching places. Freire, however, calls for the most radical revolution: a dialogical revolution that would permanently overcome the opposition mentioned above, in other words, one that would create entirely new models of social relations, where there would be no place for either oppressors or victims. It is about recovery and reconciliation, which would save the dignity of both sides of the conflict. As we already know, Freire believed that such revolution could only be realized through dialogue—thus in a similar vein to Tischner, Reyes Mate, and many others.

Irrationality and confusion destroy one's sense of dignity since, according to Paul Valéry, there are only two relations between people: logic and war. In "Monsieur Teste", he described the rational, logical attitude as politeness, the courtesy we owe to one another. Just as Simone Weil pointed out in her brilliant analyses of oppression, based on personal experience, even the most arduous working conditions do not make the most painful reality of

oppression since this would also involve disrespect and humiliation. Tischner also talked about the senselessness of work, which, alongside physical and spiritual suffering, should be eliminated through dialogue since the unnecessary suffering added to the inevitable burden of life is, in his opinion, the main subject of dialogue.

In his glorious presentation of Juan Rulfo's photography, Carlos Fuentes formulated a very intriguing definition of dignity when he wrote that it is "una riqueza inmediatamente reconocible"—"the immediately recognizable richness." He indicated a fundamental (and brilliant) connection between dignity and the abundance of possibilities. This connection suggests that to respect anybody, we must first be able to see the person and see the abundance of their potential. Consequently, disrespect (and humiliation) starts from ignoring or refusing to recognize another person's possibilities to change and grow, their skills, capabilities, the possibility of them having a better future, *et cetera*. Since the 1980s, this point of view has been one of the basic assumptions of the capabilities approach (A. Sen, M. Nussbaum, and others).

5.2. Developing Individual Talents Based on Shared Skills

According to Freire, a genuine dialogue lifts the dichotomies between people and the dichotomies between people and the world. In addition, it preserves and celebrates the differences amongst them, and there is absolutely no need for unification. It is about abundance, biophilia, the plurality of styles and is against the "culture of silence" and invisibilization. Dialogue is about making everyone visible and enabling them to see every perspective, specific context, and nuance, thanks to the analogical approach, in contrast to the univocal approach characteristic of monologue.

Both Ajdukiewicz and Freire supported the development of students' talents. However, they also believed in the fundamental importance of some basic skills and a particular intellectual attitude that enables rational dialogue, i.e., dialogue that allows the realization of common objectives and values. Hence, the great majority of their publications consist of unique/original textbooks that help the communication process through the development of abilities, especially analytical tools, for instance: asking questions, defining and classifying notions, evaluating arguments, recognizing limitations, correcting errors, being aware of prejudices and hidden supposition, *et cetera*.

The emphasis placed on pragmatic aspects in the conceptions of Ajdukiewicz and Freire calls for flexibility and open-mindedness. In order to understand one's concrete situation, one has to be able to recognize the uniqueness of the other person's situation. Everybody is unique. However, Ajdukiewicz and Freire both believed that our similarities are more important than the differences. Dialogue, thinking in terms of relations, is always beneficial for both participants. Nevertheless, following dialogical thinkers like Tischner, Mate, Freire, and Dussel, if the essential topic of dialogue should be unnecessary suffering, exploitation, and oppression, the victims' perspective always provides us with the bigger picture.

5.3. A Language of Dialogue: Clarity in Communication

When it comes to the language of dialogue, the essential characteristic is clarity. However, clarity cannot be achieved once and for all, it is a work in progress, and our language will always require updates and should be amenable to clarification. In this context, it is significant that Ajdukiewicz's colleagues and collaborators called him a "profundist," i.e., a mind that burrows into the heart of things, as he had one way to deal with widespread delusion in various domains of philosophy, in the broad sense. He calmly took various proposed ideas into his workshop and went straight to their core, with a critical mind.

As Kotarbiński wrote, Ajdukiewicz was the most discerning connoisseur and judge of the ideas proposed in his time. As we mentioned above, he was not afraid of the authorities, and his activity at the Lviv-Warsaw School typified this attitude. One who reads Ajdukiewicz's scientific works will see his tremendous responsibility, as a scholar, for the spoken and written word and his most profound conviction that human thought is mature only when it finds precise and communicative expression in words. He wrote: "[…] pupils should be trained to make statements that are matter-of-fact, unambiguous, and precise." Ajdukiewicz believed that the ability to formulate "[…] one's statements is indispensable not only in school but also in everyday life. Nonobservance of these three requirements may be tolerated in those cases where speech serves to express emotions or to arouse them, e.g., in poetry and unscrupulous agitation, but never in those cases where cognition and/or rational (i.e., a cognition-based) action are at stake. Hence it is evident that developing in pupils the ability and the urge to make statements which are matter-of-fact, unambiguous and precise is one of the principal tasks of school education" (Ajdukiewicz 1974, 3).

The main idea of semantic epistemology—Ajdukiewicz's flagship project—consists of applying formal methods to solve philosophical problems. As the title of the definitive collection of his works implies, "Language and Cognition" were the centre of his philosophical interests.

Tischner shared the same idea as a condition *sine qua non*, and of course Freire; however, the dangers of confusion and contradictions in language were also masterfully described in Orwell's *Nineteen Eighty-Four*. Some of the linguistics strategies that make any revolt or critical thought impossible are compatible with Freire's description of "the culture of silence," where victims cannot see and hear themselves and, hence, are unaware of the worst oppression. In "Children of the Days," Eduardo Galeano provides us with a beautiful description of the opposite process, namely that of "conscientização" when on September 8th, a man tells Freire that he could not sleep all night after he had written his name for the first time in his life.

Conclusions

It seems that dialogical and analytical thinkers, especially from the Lviv-Warsaw School, had surprisingly convergent ideas regarding education. There are two basic systems of education: liberating, dialogical, horizontal, anti-irrational, and radical, and on the other, dominating, monologic, vertical, irrational, and sectarian. Of course, according to Freire, all these opposing characteristics fall under the most general and decisive opposition between biophilia and necrophilia. Following Ajdukiewicz, pragmatically organized education in logic is required in any dialogical approach to education and social life. In consequence, only within dialogical education can we consider styles, as it is the only option that accepts and promotes creativity.

It can be assumed that all current projects and implementations of—more or less—revolutionary transformations of social structures should also result in changes within educational systems. In the context of the experiences of the previous century, in particular, the Polish social movement related to the activities and heritage of the NSZZ "Solidarność" [The Independent Self-Governing Trade Union "Solidarity"]—its successes and failures—it should be assumed, however, that only (revolutionary) changes in educational systems will result in positive and effective projects (and implementations) of transformation of social structures. Suppose we are interested in the future formation of (diverse) institutions of a dialogical society. In that case, it must be assumed that these processes of constituting such institutions should be firmly and deeply founded on accurately (pragmatically)

organized education within the framework of logic. At this point, let us support this conviction with the hope expressed by Rancière in the following passage:

> It is always possible to play with this relation of self to self, to bring it back to its primary veracity and waken the reasonable man in social man (Rancière 1991, 108).

Finally, let us note that that this year, on September 19th, we will celebrate the 100th anniversary of Paulo Freire's birth. Another mention of Freire in "The Children of the Days" can be found on November 28th. Galeano recalls that on this day in 2009, 12 years after Freire's death, the Brazilian government apologized for arresting and throwing him out of the country without permission to return, and adds this crucial piece of information: "Today, 340 Brazilian schools bear his name."

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An Artist's Styles of Discourse Words, Strokes, Images, Action: A Quiver of Expressive Media Probing the Unknown

Abstract

In this essay, I examine various styles of discourse in my four-channel practice of creative expression. While the definition of discourse is attributed primarily to writing or speaking, I am including painting, filmmaking, and teaching as dialogic exploration. While each has a particular discussion style between an artist (initiator) and recipient, I will show that they flourish in unpredictability and the unfound. The essence of original innovation is mined in uncertainty and unknowing. With this understanding, one can develop new and groundbreaking imagery in any medium.

Keywords

Creativity, Expression, Teaching, Art & Healing, Multidisciplinary

Introduction

In the late 1970s, I found a silver ring by the side of the road near my house (Fig. 1). Even though it had been mangled and crushed by traffic, I could discern a Hindu female deity on the damaged surface. She carried what appeared to be a brush in one upraised hand and a writing implement in the other. I guessed that the silver spherical image had been a coin portraying the Hindu deity Saraswati, goddess of knowledge, music, art, speech, wisdom, and learning, and was the third in the Trivedi trinity of Saraswati, Lakshmi, and Parvati. Although too damaged to restore, I kept the rather magical ring all these years. As I grew adept in more means of expression, I understood the evocative image of the multifaceted deity.

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Figure 1. Indian Deity Saraswati Ring
Source: Collection of the artist

As a painter, writer, filmmaker, and educator who works with ideas, words, images, and commodities, I consider a continuum of discourse styles, each reaching a different facet of kaleidoscopic consciousness. An artist is a medium that utilizes a particular medium for each vehicle of expression to create a style that denotes a unique manner in which something is said, created, expressed, or performed. Although usually reserved for verbal or written expression, discourse refers to exchange, conversation, or detailed exposition. While metaphors and similes may be particular to all four vehicles of expression that I employ, each perhaps alluding to similar meanings and messages, diverse forms stem from various portals of knowing. My choice of medium is prompted by a need to communicate most profoundly.

Although I was a writer long before I was a painter, I have been painting and writing simultaneously since the 1970s. Painted images arise independently from the content of expository writing, and each discipline entails a unique and separate process. In the last 30 years, I have been developing original theories based on cross-cultural psychiatry, neurology, bio-theology, mental and physical healing, many of which have already been published in multidisciplinary publications, in addition to my book about the relationship between creativity and mental illness. I write about insights that I have gleaned from my personal life and observations collected during my travels, suggesting an emerging philosophy based on my global anthropological, biological, theological, and multidisciplinary investigations.

Writing

Writing begins with a developed concept that I wish to transmit coherently in an exciting and redolent manner, in strong contrast to my painting which begins typically with random strokes and no intentional goal. While I see the entire gestalt of a painted image at every step of the process, I must read and write each piece again and again from start to finish before I can fully affirm the content. Although I have a goal in mind, the creative adventure lies in the divergent tangents, analogies, and metaphors that may arise along each new untrodden path to enrich the foundational idea. The discourse is between writer and reader, the former hoping to persuade the latter to intellectually comprehend and emotionally feel the intention of the writing so that they will follow the story to the last word. The reader follows along, swimming in the ideas presented up to each instant, enticed to join the writer in further exploration.

Painting

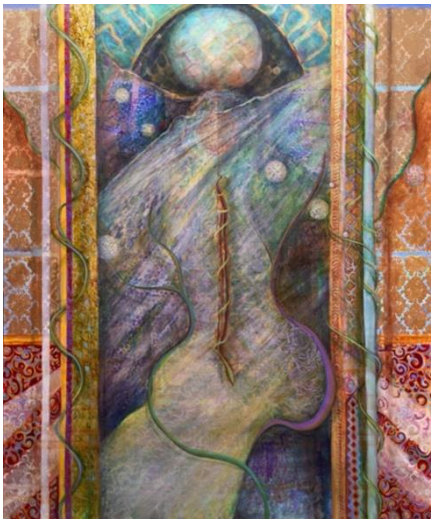
I work in a series of paintings, sometimes two or more series concurrently. The series may deal with a specific subject matter or follow a mysterious dialogue between the stroke and my subconscious. In each series, I deal with a specific idea and/or technique until I feel that the emerging images are beginning to have repetitive elements, meaning that I am not pushing further from the safety of the known. I know that I do best when challenged and must invent something at each stage. By "invent," I mean to allow the image to lead me further into the mystery.

I am a painter who is seduced by and courts the emerging image. In this case, I am more like an abstract expressionist who does not know the outcome of the work until it is finished. However, my paintings are ultimately not abstract, as one of my goals for the yet-to-be-born image is to have a convincing dimension. It has been suggested that I document my process in every significant painting. Each painting is an evolutionary tale that can also be observed in photos of the paintings during their progress. Furthermore, the paintings' titles keep changing as the image is transformed, and titles are only decided in the last embodiment of the painting.

1. September 11, 2020

2. September 28, 2020

3. November 2, 2020



4. Delicately Tethered, February 28, 2021

Figure 2. Painting in Progress. "Delicately Tethered",
Gilah Yelin Hirsch, Acrylic on Canvas, 72 inches x 60 inches.
1. September 11, 2020, 2. September 28, 2020,
3. November 2, 2020, 4. Delicately Tethered, February 28, 2021.
Source: Collection of the artist, final version of the painting, Delicately Tethered
Artist's website https://gilah.com/

Generally, my paintings begin with a word, a thought, a memory, a seemingly random stroke, an experience, with no final image in mind. I often encrypt letters, words, and phrases in various layers to make the next image with meaningful structure and content as I engage in a call and response process between the developing image and my attraction to the unrevealed, coy, elusive image. I often turn the canvas and drop washes (dilute pigment) over the current image to see what will be concealed and/or revealed when dry. I welcome accidents of paint drips that may contribute to new imagery or may evoke another time or space. I intuitively follow the image for months, adding seemingly arbitrary events and information. Often, during this gestation period, the painting could be said to be finished, but I purposefully chose to chase the image further. Eventually, I recognize an original image that has its own life and breath and demands only slight adjustments in light, shadow, and dimension. During these last stages, I am already beginning another piece, but I keep peeking at the former work from the corner of my eye. Occasionally I will catch a spot that needs attention. Soon it stops asking and is stable, an authentically new image, replete with its self-generated title. In this case, the discourse is between the unknown and my careening imagination.

Message Painting

In the late 1980s, I created painted allegories, specifically narratives, based on dreams and visions emerging from my subconscious to create metaphorical images with distinct meanings and parables. I continue to work individually on these small-scale paintings as these images rise, even while I am engaged in current works that require an opposite approach to gestating an image. I have designated the narrative paintings to an ongoing series called *The Venice Psalter*, a nod to the marvellous medieval illuminated narrative paintings that I have always admired. *The Venice Psalter* paintings begin with an image I already have in mind, and my task is to execute the image as persuasively as possible.

For example, the painting called *Choice* (2010) (Fig. 3) depicts the protagonist standing on the threshold between this world and the next, having to decide whether to take another breath and return to the much-needed work in the world or be free of the tribulations and entanglements of life. In this case, I needed to create a scene, a context in which this difficult decision may be experienced. Although couched in the mode of medieval im-

agery, it is timeless. While I reified the situation according to my imagined vision, viewers may understand this differently. In creating the image, I am giving it life to assuage my own need for externalization. This vision is independent of another's perception, although I hope that the viewer will receive meaning that they can relate to their own lives and encourage discourse with others that may lead to open-ended discussion.

Figure 3. "Choice", Gilah Yelin Hirsch, 2010, Acrylic on Canvas, 36 inches diameter
Source: Collection of the artist, https://gilah.com/individual-works-2007-2011/

Kol Eesha (Hebrew for Voice of a Woman, 1999) (Fig. 4.) is another allegorical painting in which I created a very feminine Torah with only the words *Kol Eesha* rebelliously inscribed in the holy scroll. This image was prompted by a Judaic injunction against a woman's voice, distracting a man from studying the Torah, from being heard by a man. The painted image rose almost 60 years after the inciting incident when at eight years old, I asked my orthodox Torah teacher why we were instructed to refer to God only as He, while the names and pronouns of God in the Hebrew text are both male and female. My shocked, incensed teacher grabbed me by my long red hair, threw me out of the class, and never allowed me to come back. This event accelerated my early and perpetual questioning and seeded my feminist stance in the world.

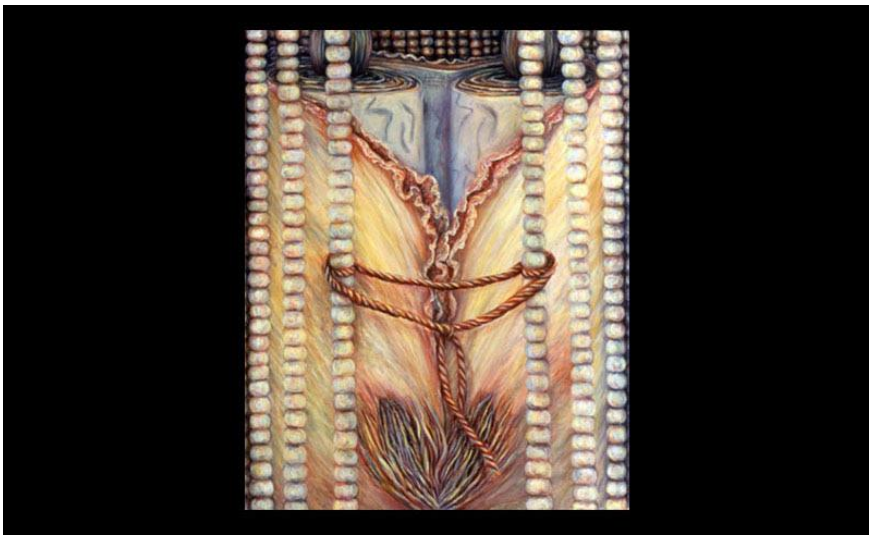


Figure 4. "Kol Eesha", Gilah Yelin Hirsch, 1999, Oil on Canvas, 32 inches x 28 inches
Source: Collection of the artist, https://gilah.com/venice-psalter-series-1991-1999/

In this instance, I created an illusionary female Torah, a two-dimensional portrayal of a three-dimensional object with no specific context, as the image itself startles the viewer by positing a prohibited vision of the female scholar. I doubt that one would call this "still life" as this rogue Torah is painted to unsettle the viewer rather than a cultural reference to historical still life. The discourse here is focused on waking the viewer into rethinking and expanding the context.

I have never considered myself an illustrator, although certain paintings I have created in the past appear to coincide with writings of the present. For example, *Birdman's Proposal* (Fig. 5), created in 1999, became a companion image for *The Raven's Gift* essay.

Here *Birdman* is shown as a hybrid human–bird, a fantasy image exemplifying the gist of the following story: I was sitting on my roof-deck some years ago, and a raven landed at my feet carrying a golden ring in its beak. The raven dropped the ring at my feet. This incredibly magical event brought to mind fairy tales in which a prince, about to marry the legendary princess, is transformed into a creature by an evil witch and is banished to seek his fortune, to slay dragons or other offenders. He is tasked to return with tokens of his adventures, often in the form of golden rings or golden apples. When he returns and gifts the golden ring to the princess, he is transformed into a prince again—and of course, all ends happily. The discourse here, the

duality and one-ness of two realities, is demonstrated by reifying the moment the miraculous hybridization occurs, a single two-dimensional animated image in transition. Is the story necessary here? I am satisfied that the image evokes questions and answers from the viewer—both to the artist and about the image.

Figure 5. "Birdman's Proposal", Gilah Yelin Hirsch, 1999,
Oil on Canvas, 36 inches diameter
Source: Collection of the artist, https://gilah.com/venice-psalter-series-1991-1999/

Art and Healing

After a near-fatal accident in 1999, I painted *The Diamond Series*, seven large diamond-shaped paintings in which I figuratively reconstructed my terribly damaged body, working in layers of healing imagery, cell by cell, organ by organ, system by system until I was whole once again. I have personally practised and taught art and healing for many years to doctors and patients. I also wrote into the images as I know that the more faculties one uses to create an image, the more powerful it will be. In this vein, the discourse is an oscillating reflective process between the intention and will of the artist or patient and the focused artistic visualization to attain wellness. By concen-

trating on reconstructing each body part according to utmost attention to the form as seen and emulated in a medical text, added to information obtained from other medical and bio-theological practices, and potentially enhanced by the imagination of the practitioner, the artist/patient re/creates the healthy version of that which was damaged.

In *Who Will Live and Who Will Die?* (Fig. 6), the first of the healing paintings, I concentrated on the spinal column, the ribs, DNA, arteries, and veins, the disposition of calcium molecules also representing compassion and regeneration of the spirit. While painting this image, the white spheres appeared and situated themselves in this pattern which I later understood to echo the pattern that I had been taught in McLeod Ganj, India, (1986) when I was instructed by the Dalai Lama in the Tibetan Bodhicitta (compassion) visualization practice. One visualizes a white sphere of compassion moving from the top of the head (crown chakra) through all the cells, systems, and organs on one side of the body and then up the other and out the crown chakra to spread compassion to all sentient beings. I later hypothesized that the visualized spheres were combined with calcium, and the practice of this bio-theology nourished both mind and body. (My theory was later confirmed by the Tibetan authority on theological practice. I discovered the identical disposition pattern of power points in acupuncture, moxibustion, and morphogens on further research into medical traditions. The resulting paintings may not necessarily be "art" pieces but can be perceived through a proprioceptive lens to be absorbed and used as "medicine" art. Tibetans visualize their bodies as the Medicine Buddha as part of the healing protocol. Navajo and Hopi create sand paintings on which the patient reclines, knowing that they will be cured by the images entering the body. In many early cultures, such as in Bali and Bhutan, the patient observes ritual dance which realigns the body to heal physically and emotionally. Opera would be another art form that does the same. While the imagery is known to change the viewer in the East, this knowledge is mainly limited to what is called pornography in the West. Everything one sees changes the psychophysiology of the viewer. Creating and/or observing a healing image will produce a positive psychophysiological change in both the artist and the viewer, while conversely, a negative image will cause a decline in the health of the mind and body. The *Diamond Paintings* have been exhibited internationally, and viewers in all cultures react the same way—sensing a new positive alignment in the mind, body, and spirit. The discourse here is tripartite between creator, image, and viewer.

Figure 6. "Who Will Live and Who Will Die", Gilah Yelin Hirsch, 1999,
Oil on Canvas, 85 inches x 85 inches
Source: Collection of the artist, https://gilah.com/diamond-series-1997-2000/

*Grounded in Light (*Fig. 7), another painting that deals with reality in an original way, was created during COVID-19 in 2020 and was prompted by the necessity of mask-wearing. While, like *Birdman*, it was inspired by an authentic experience, the evolution of the event to image came about by documenting the changed necessities of life during that difficult time. The ultimate, incredibly layered painting reaches far beyond the necessity of wearing a mask for physical health and safety and alludes to the many overlays of psychological masks we are required to wear throughout our lives. Here, the image as a layered metaphor prompts the discourse between artist and viewer, beckoning the viewer deeper to decipher the mysterious masked image.

Figure 7. "Grounded in Light", Gilah Yelin Hirsch, 2020,
Acrylic on Canvas, 52 inches x 52 inches
Source: Collection of the artist, https://gilah.com/individual-works-2017-present/

Filmmaking

My films, *Cosmography: The Writing of the Universe* and *Reading the Landscape* (Fig. 8), are unusual as they are meant to create a shift in consciousness by induction of rapidly flowing sequenced content-full images that are derived from one another. These are painstakingly created films requiring from 20 to 30 years respectively to complete. Every frame is created using various digital programs by overlapping filmed, photographic and hand-drawn images and animation sequences. Thus, each frame requires weeks or months of manipulation to create a single calculated image to bring the viewer's attention into a deeper state of consciousness. The newly created layered image must then be animated and orchestrated to the deliberately selected changing music as it almost imperceptibly transitions from the previous to the subsequent frame. The next step for each cumulative frame is to add earlier dialogue recorded in "green screen" studio sessions or on-site live shoots in various countries. Finally, a text is added to each frame to provide translations for the many languages used.

Something like a trance is experienced as the viewer is led through the many images accompanying music or vocals, each singly powerful and forming an unbroken stream of mind-altering visual and audio information. These films are more closely aligned to the word flow of poetry, where the aggregate effect of many carefully chosen words penetrates the viewer's consciousness and causes a purposeful psychophysiological change. The discourse is between the filmmaker/artist as shaman or healer (changing consciousness) and the viewer as respondent or participant. Unlike usual filmmaking, in which one is led through reels of filmed action to follow a plot to its conclusion, my films are meant to be fully experienced frame by frame, physically and emotionally both in the body and mind, more of a performing art experience than a narrative. One of the significant differences in viewing my films is that the audience is always so affected that there is a universal moment of silence, integration before applause begins.

Figure 8. Still Frames from "Reading The Landscape", Gilah Yelin Hirsch, 2019, film
Top row, left: Kenya; right: English, Hindi, Mandarin, Navaho;
Second row, left: Hebrew, right Hebrew;
Third row: Tibetan, Japanese
Source: https://readingthelandscape.org/ & https://gilah.com/reading-the-landscape/

Teaching

After over 50 years of university art teaching and training artists, I have found that the most effective teaching comes from physical demonstration and having the students act out and embody a concept. For example, in teaching the nuances between Hue, Value, and Chroma, I have the students stand in a semicircle according to their shirts' random colour, let us say the whitest white on my left as I face them and the blackest black on my right. I explain the differences in meaning—hue means colour, value means lightness to darkness, and chroma means brilliance to dullness. The students then rearrange themselves to account for the newly seen nuanced variations of hue, value, and chroma, formally not visible to them. This high-impact teaching remains indelibly remembered forever. Here, the discourse is between teaching and action, which intellectually and proprioceptively changes the psychophysiology of the student to accelerate, gain and imprint knowledge. *Become what you describe* is a powerful teaching tool.

Similarly, I ask the students to notice that the hue of the student's shirt next to them will change the hue of their shirt and vice versa. I call this "reflection and refraction" (R and R). I then suggest that this is also evident in human behaviour in which each action repercusses in another's reaction either markedly or subtly (chroma and value). The discourse between teacher and student is multisided as students begin to practice what they learn in various vehicles ranging from behaviour to art.

Figure 9. California State University Dominguez Hills Art Students, 2012
Source: Photo by the author

Conclusion

Ultimately, it is in the *unknowing* that creativity thrives; it is where variations and modifications of discourse are discovered and pursued. The tiny increments of participation in unpredictable space and time between the actor in any medium and the recipient encourage conjuring the most unusual and practical imagery and knowledge. This kind of responsive vision may stimulate hope for a resilient, innovative, positive, and caring future.

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Jocelyn Ireson-Paine*

The Medium Wrecks the Message: Describing Artistic Style Using a Relational View of Art

Abstract

I formulate style as "compensatory triangles," describing how naïve depictions get rebalanced by "pictorial techniques" to compensate for information loss and interference from their medium. I also formulate the information lost, perhaps because of interference, when translating between styles. The formulations may be helpful in teaching. They, and proposals for further mathematisation related to deep-learning style transfer, are inspired by category theory and a relational view of art.

Keywords

Artistic Style, Aesthetic Balance, Influence of Medium, Category Theory, Art as Transformations

Introduction

This paper was inspired by applying a branch of maths called category theory to cartooning. It is an unusual combination, so I must explain why I am doing this.

A terminological point: by "art," I shall mean drawing and painting. However, the ideas extend to media such as film and sculpture, to acting (Walter 1999 pp. 190–191), and non-representational arts such as music (Joncas 2020), dance (Mannone & Turchet 2019), and fashion (Ireson-Paine 2021b, Chapter 22).

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Category theory is one consequence of a late-19th century mathematical revolution wherein mathematicians reformulated geometry to study geometrical transformations (Tao 2013). They asked questions such as what remains unchanged by such transformations and whether there is an "essence" that all objects share even though they differ from one another.

This revolution led mathematicians to focus more on transformations and less on the objects transformed. In category theory, this reaches its pinnacle. I claim we should extend this world-view to art and think of aesthetic transformations (§2). The items transformed will be drawings, meanings, styles, etc. The paper is exploratory, but in other fields, including computer science (Goguen 1991) and the semiotics of metaphor (Joncas 2020), category theory has proven an excellent tool for formalising and organising and driving intuition. So explorations are worthwhile.

Category theory studies "categories." These are mathematical objects whose name has nothing to do with the everyday use of the word. Ignore the latter, or it will be confusing. A category is a network whose nodes are items of interest. They are connected by arrows representing transformations, mappings, comparisons, and functions that relate one item with another.

That is what categories contain, but what is their function? A category is a "workspace" where items and their relations are laid out for mathematical study. Typically, we study the relations. One relation might state that one item is essentially the same as another, despite superficial differences. Another, that one item is part of another and fits inside it. There are many possibilities.

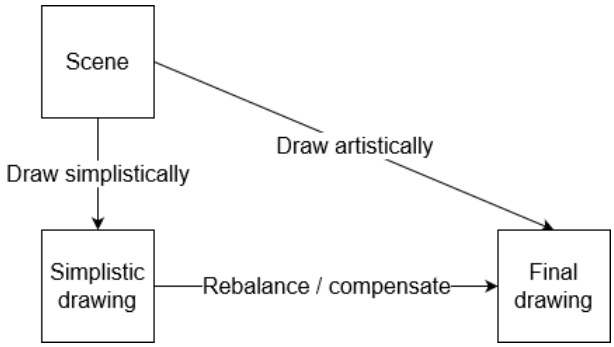
We also study similarities between categories. Often, we ask how one category is "mirrored" in another. Because even though the items in one might be very different from those in the other, the pattern of relations can be the same. It is as if the categories were Perspex sheets which we want to superimpose. So categories help study translations between different conceptual systems, such as art styles.

When I asked the questions that led to this paper, categories were in my mind. I was on one side of Oxford's Cornmarket Street, sketching someone on the other side. How detailed, I wondered, should I make their hands? Should I draw the boundaries of all the fingers, or would that clutter the sketch? If I do not draw them all, aren't I lying? However, how can I justify lying? Furthermore, how big a lie am I allowed to tell if I can? After all, I also program computers, and there, I must not lie at all.

The hands brought to mind a technique many cartoonists use when drawing repeated textures such as bricks, grass, or stones. They draw only texture patches, leaving the viewer's brain to fill in the rest (§3).

Why do this? It saves work, and it can also restore tonal balance. In pen drawings, areas where all the texture is shown, may look too dark and grab too much attention. So removing texture restores what we might call attentional balance.

At this point, category theory made me think of a triangle—I call it a "compensatory triangle"—of transformations (§5):



The long arrow represents the transformation from the original scene to the final drawing. The two shorter arrows say this is the composite of two other transformations. The first draws the original scene simplistic and formulaic, rendering all visible edges as lines. The second restores balance to that drawing by deleting texture. I call this a "rebalancing" or "compensatory" transform.

This figure inspired two mathematical observations. The first was that some transformations have "inverses," i.e., transformations that undo them. Thus, the inverse of "walk east one foot" is "walk west one foot." The rebalancing transform is not an inverse. However, it is close; it is an almost-inverse (§6) which undoes the bad effects of the simplistic-drawing transformation as best it can. It cannot undo them completely, as the original scene and the drawings are in different graphic languages. However, it can try a workaround: reducing darkness by deleting lines rather than lightening or thinning them.

The second observation was that we should catalogue other artistic transformations and ask which counts as rebalancings. This observation led to a database of art techniques (Ireson-Paine 2021a), insights into how artworks behave when scaled and rotated (Ireson-Paine 2021b, Chapter 22), and the examples from §3–§15.

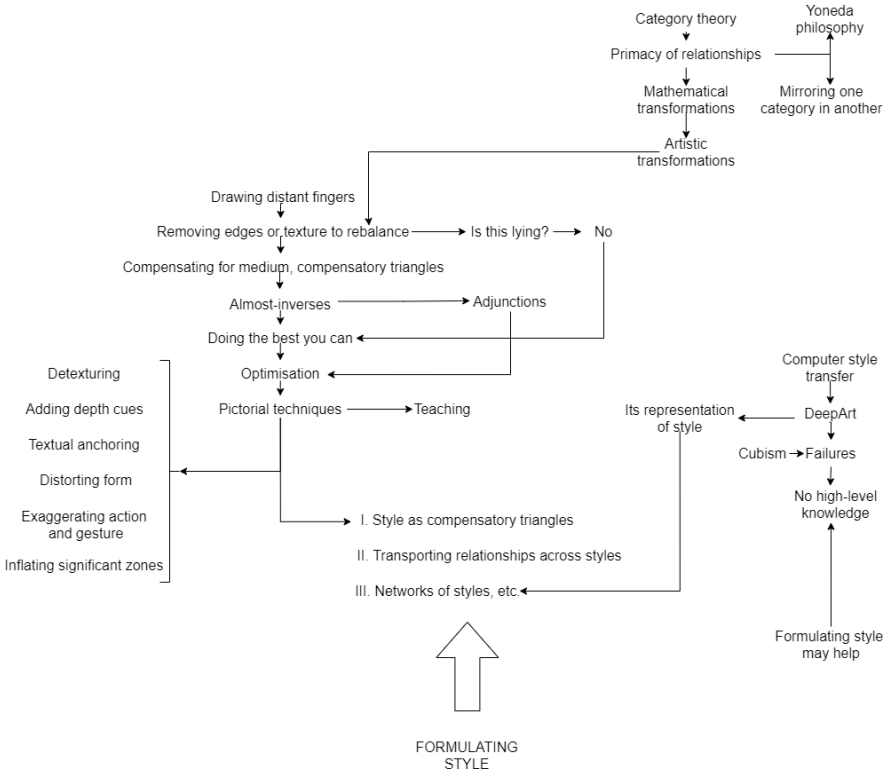
In those sections, I use the phrase "pictorial technique." This phrase came about indirectly. Doing the best one can undo the bad effects means getting as close to a goal (restoring tonal and attentional balance) as possible. Nevertheless, "getting as close as possible" is optimisation. So when I draw, I optimise. However, the almost-inverses mentioned above seemed akin to "adjunction," an actual category-theoretic construction closely related to optimisation (Critch 2009). Searching for other researchers who also regarded art as optimisation led to Frédo Durand and his "pictorial techniques" (§9). By this, Durand means techniques that transform a "direct recording" of the scene to produce the same effect on the viewer as the original. These are like my rebalancing but act on photos or other direct recordings rather than formulaic drawings.

My first formulation of style (§16) arose from these: express it as a collection of compensatory triangles, where each triangle shows how an artist uses a particular pictorial technique.

The second (§18) was inspired by the relational view and mirroring. It considers relations between styles and asks how far can an artwork be done in one style mirror one done in another? When does the medium prevent mirroring?

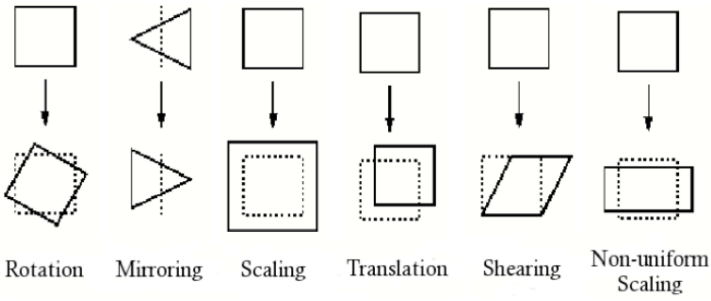
We should explore other directions too. There is a popular method of restyling one artwork in another style, deep-learning style-transfer (§19). I show experimentally (§20) and by argument (§21) that, although impressive, it does not "know" enough about style to avoid mistakes. The precise mathematical formulation might give it that knowledge and be attractive for its own sake. So it is worth exploring further (§22).

The diagram below summarises the main links between ideas herein. In addition, almost-inverses and optimisation contribute to formulation I, "mirroring" to II and the Yoneda philosophy (§22) to III.



1. A relational view of art

I mentioned the shift from focussing on mathematical objects to focussing on their transformations and proposed that we shift our world-view of art in the same way. Here is one example of mathematical transformations to make this concrete, familiar to users of programs such as Photoshop. They are stretches, scalings, rotations, and other transformations of two-dimensional shapes (de Vries 2006).



Artistic transformations include those from §3–§15: detexturing; inserting form cues; textual anchoring; exaggerating action and gesture; inflating regions crucial for recognition. Others are catalogued in (Ireson-Paine 2019; Ireson-Paine 2021b).

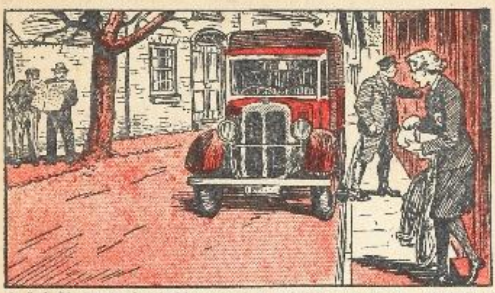
As an analysis analogous to those of (Vandoulakis & Stefaneas 2015; Vandoulakis 2017) would show, I am primarily concerned with transformations that help depict geometry and texture. Future papers will apply these ideas too, for example, depicting emotion in Expressionism.

2. Translate, then delete cues to restore balance

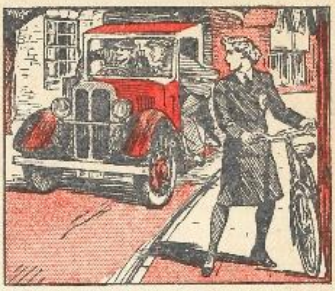
As mentioned, cartoonists often draw only patches of texture. These examples demonstrated with cartoon bricks (Clipart Library n.d.; Private Eye 2019); realistic bricks (Tip Top Book 1953); fur (Hart 2000); and grass, weeds, and cobbles (The Garden Machine Centre 1969):

EXCITING HOLIDAY

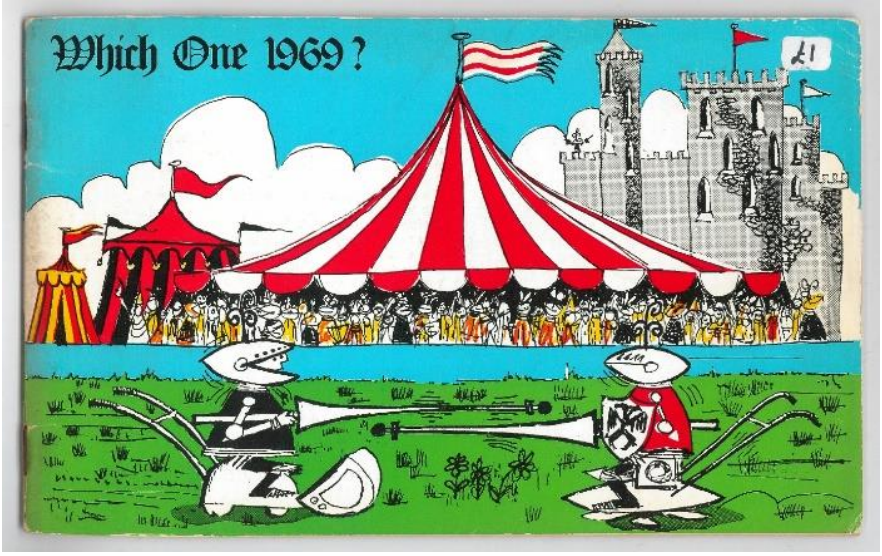
The Romantic Story of a Very Brave Schoolgirl

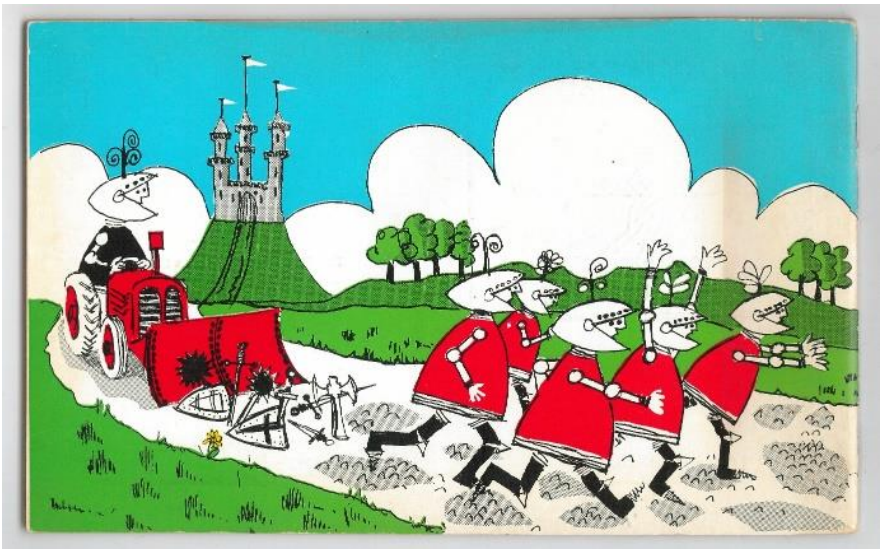


1. Judy Morley, head girl of her school, is on holiday and decides to cycle over to her aunt's lovely house in the country. In the village Judy stops to buy some sweets. As she leaves the shop, she sees a fairly large motor van pulled up nearby.



2. Suddenly, to her surprise and amazement, she sees two men hurry across the road and climb into the driving cab of the van. Judy is certainly puzzled, for she has already seen Mr. Brown, the owner of the van, go into one of the village shops.





Detexturing compensates for the fact that drawing all the texture would pull the viewer's attention away from the rest of the drawing and spoil tonal balance. Imagine how cluttered a drawing of these Oxford houses (Ireson-Paine 2015) would look if it showed every line of mortar:

I think of this as follows. The language of pen and ink is poorer than that of reality because it cannot express subtle differences in tone.

So drawing lines between the bricks makes those lines stand out much more than they do in reality.

To restore balance, we must make them stand out less.

If it were, we could lighten or thin them, but we cannot because our language is not rich enough. So we do the next best thing and remove some of the lines altogether, leaving just enough to suggest that there are bricks.

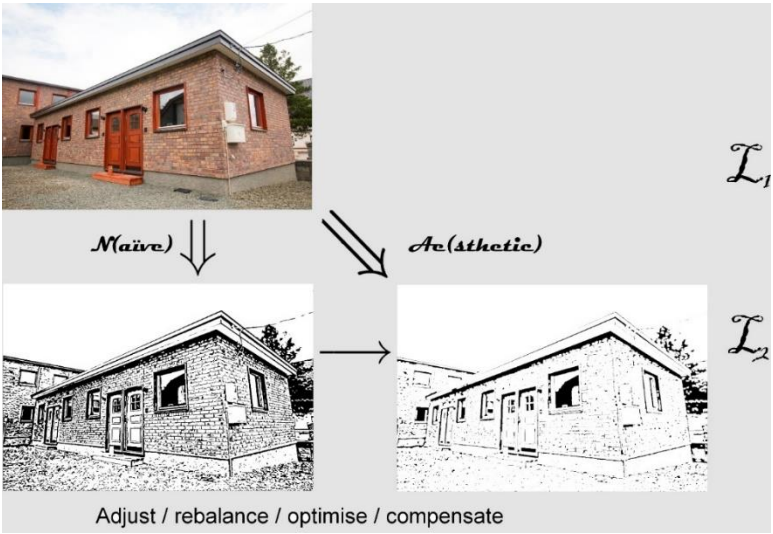
This practice gives an exciting interchange of properties. We want to reduce average darkness by lightening or thinning our lines, but changing that property is not allowed. So we change another one, the number of lines.

3. Detexturing has costs

However, there are costs. The viewer cannot know whether a blank patch is blank because the texture was deleted or there was never any. That is inevitable. Because the rebalancing transform adjusts the "wrong" property, it interferes with information that it should not touch. However, it cannot help touching it. I discuss this in my second formulation of style (§18).

4. Detexturing as a compensatory triangle

Here is detexturing as a diagram. The vertical arrow represents making a simplistic or "naïve" line drawing, and the horizontal arrow detextures it, removing bricks. (I use "naïve" with its everyday meaning, not that of "naïve art.") They combine to give the diagonal arrow. The $\mathscr{L}$s signify different languages: that of reality and that of pen and ink.

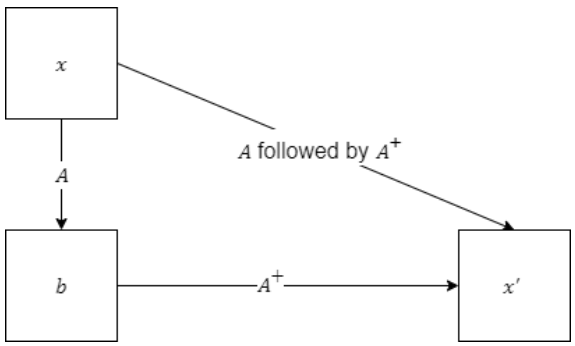


I would have liked the bottom two images to be cartoons. The one on the left would show all the bricks; that on the right would show only those needed to convince the viewer there are bricks and maintain tonal balance. Nevertheless, I did not have time to draw two cartoons, so I have simulated them by greyscaling and thresholding the first image to make the second, then debricking that to make the third.

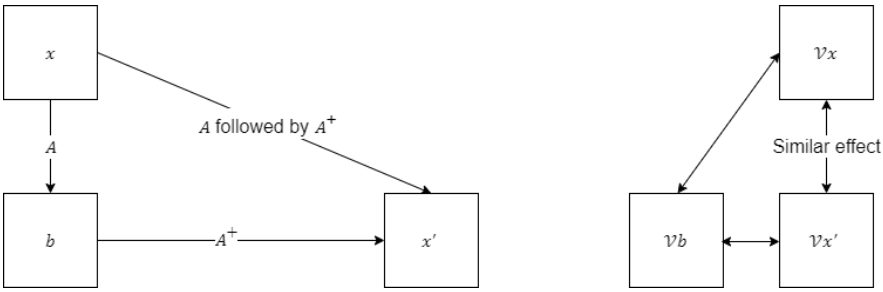
5. Detexturing as a generalised inverse

Mathematically speaking, detexturing resembles a "generalised inverse" (Generalised Inverse 2021). It is an operation that undoes another operation, not precisely, but as closely as circumstances permit. Here, the circumstances change visual language from reality to pen and ink, and the latter allows only a few "moves." No combination thereof can completely undo the damage wreaked by translation. So we look for moves that do the best they can.

We can express this in the notation from (Dataplot 2009). Let x be a scene, and A transform it to a simplistic drawing b. Symbolically, $b=Ax$. Let A^+ be the rebalancing transform. Then A^+b partially reverses A. It undoes its unwanted effects and finds an x' that is as close to x as possible while acknowledging that x and x' can never be identical:



For the word "close" to make sense, some notion of distance between images is needed. One possibility is to compare the effects on the viewer (§8). This comparison can be expressed as below, where we augment the diagram with three boxes on the right, each representing the viewer V's response to scene or drawing:

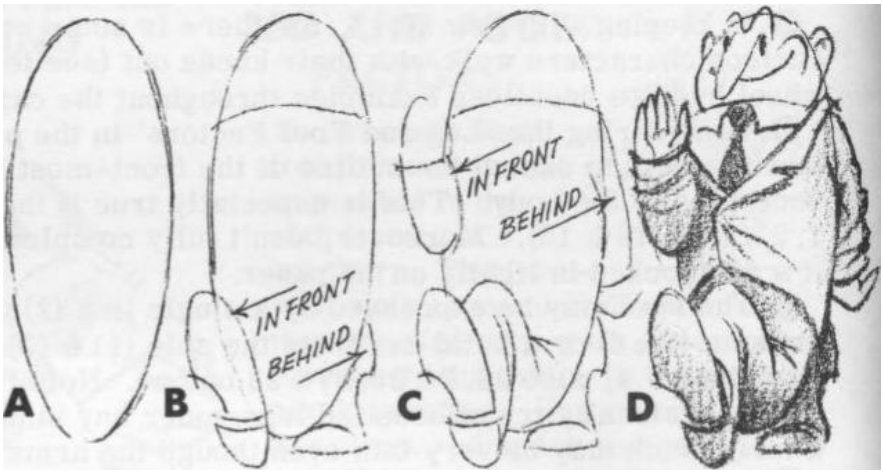


6. Detexturing as optimization

Because the rebalancing transform wants to make a drawing as close as possible to another, it is optimisation. This optimisation is consistent with Frédo Durand's view (§9) that the artist has specific goals and depiction produces a picture that best satisfies them (Durand 2002 §4). As Aaron Hertzmann says (2010 §4.2), this allows us to think about what we want to compute while largely abstracting away the steps required to compute it. Like the compensatory triangles and the idea of generalised inverse, it aids thinking by letting us ignore detail.

7. Compensating by adding rather than deleting cues: representing the form

Artists add cues and delete, e.g., when depicting three dimensions. Here is an example from Jack Hamm's *Cartooning the Head and Figure* (1967, 60):



Perhaps Hamm draws so many creases because it gives more lines to occlude, thus making the most of a vital clue:

> There are only four ways an artist can produce the illusion of forward motion in two dimensions: 1. By perspective (things getting larger as they come forward, smaller as they go back), 2. By overlap (one thing in front of another), 3. By values (dark and light) and 4. By colour (its several attributes).
>
> The cartoonist must use the first two almost exclusively. When one or more cartoon characters are considered apart from their surroundings, overlap assumes priority over all other ways. For 'Mr. Dumpy' above, the foot overlaps the lower leg, the lower leg overlaps the upper leg, the whole leg overlaps the body, and the body overlaps the remaining foot in the rear. NOT ONLY IN THE FRONT VIEW WALK, BUT IN ALL CARTOON ACTIVITY, THE FOREGOING IS MOST SIGNIFICANT.

Hamm uses occlusion to vivify forward motion. Below is a different aspect of three-dimensionality: cylindrical form:

The drawing is by Len Doust, author of a popular series of how-to-draw books in the 1930s and 1940s. In *A Manual on Sketching from Life*, Doust (1949 plate 12) writes:

> The next essential fact always to have at the back of your mind is "form," or the fact that the figure which you are drawing has thickness as well as outline.
>
> If you study closely the great masters of figure drawing in outline, you will be amazed to discover that they manage to indicate the "form" of a body without the use of shading. How is this done? The secret of these clever drawings is often in certain lines on the figure or head and not actually on the outline—a fold, a collar, a cuff, a crease. Look at these lines carefully, and you will observe that they are very correctly drawn, sometimes even more than the actual outline. A simple illustration of this point is in Fig. E, Plate 12.

8. Pictorial techniques

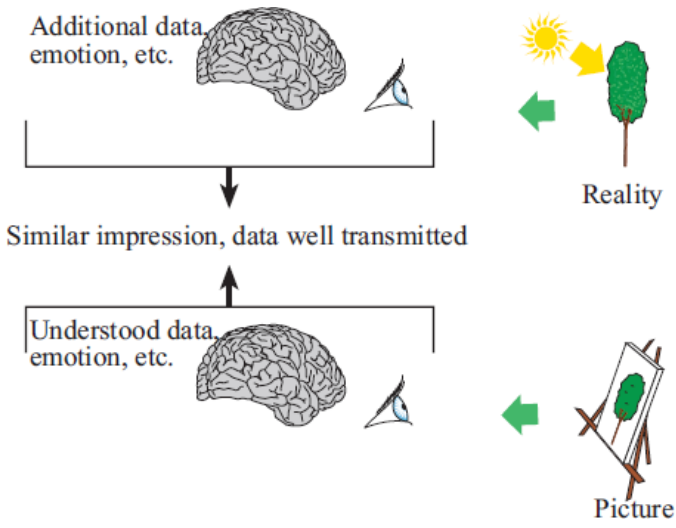
All the above are what Frédo Durand calls "pictorial techniques." This expression is a valuable coinage, which I shall adopt. Durand (2002 §4) explains that pictures are flat, often static, and of restricted extent, contrast, and gamut. Therefore, a direct recording of the scene—such as a photo—may not give the most accurate impression of the original. Some impressions may need to be strengthened, e.g., via the techniques prescribed by Hamm and Doust:

> An image where the contrast at the occluding contour is reinforced might provide a more faithful depth impression, because this compensates for the lack of stereovision or accommodation cues. This is an example of *pictorial techniques* to compensate for the limitation of the medium. A missing cue is rendered through a different perceptual channel (here, stereovision is compensated through occlusion).

Durand's "direct recording of the scene" plays the same role as my "simplistic" or "naïve" drawing. Both are produced from the scene by simple formulaic processes. Both lack or misstate information that the scene contains, so they do not evoke the same impression as the scene in the viewer. Both, therefore, must be repaired with "pictorial techniques":

> Indeed, representing a given scene consists in producing a picture that induces a similar impression to beholders as they would have in front of the real scene (Fig. 6).

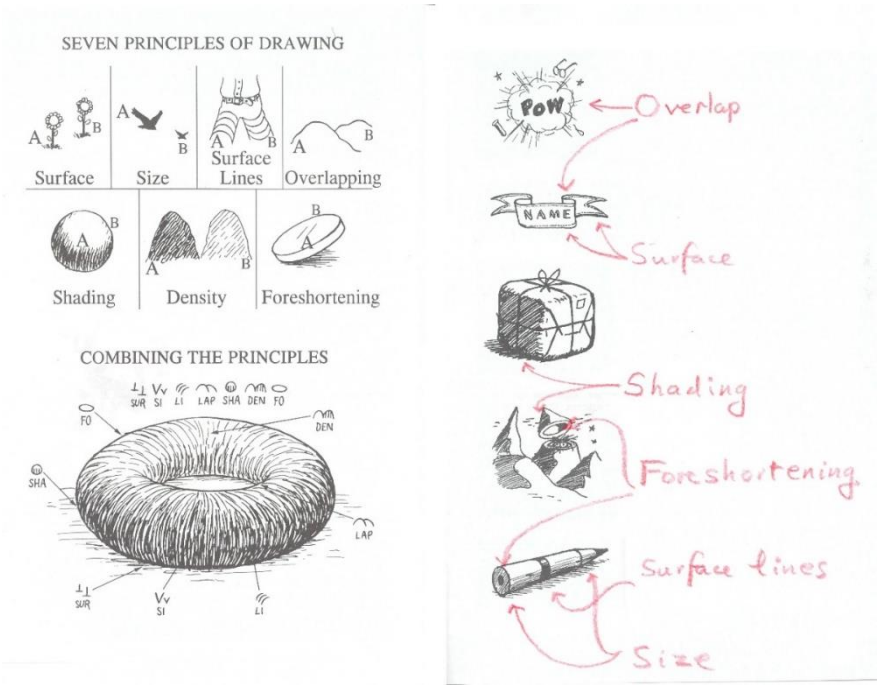
Below is Durand's Figure 6:



The two brains correspond to the two right-hand points in my diagram at the end of §6. The tree and easel correspond to its compensatory triangle's top-left and bottom-right points.

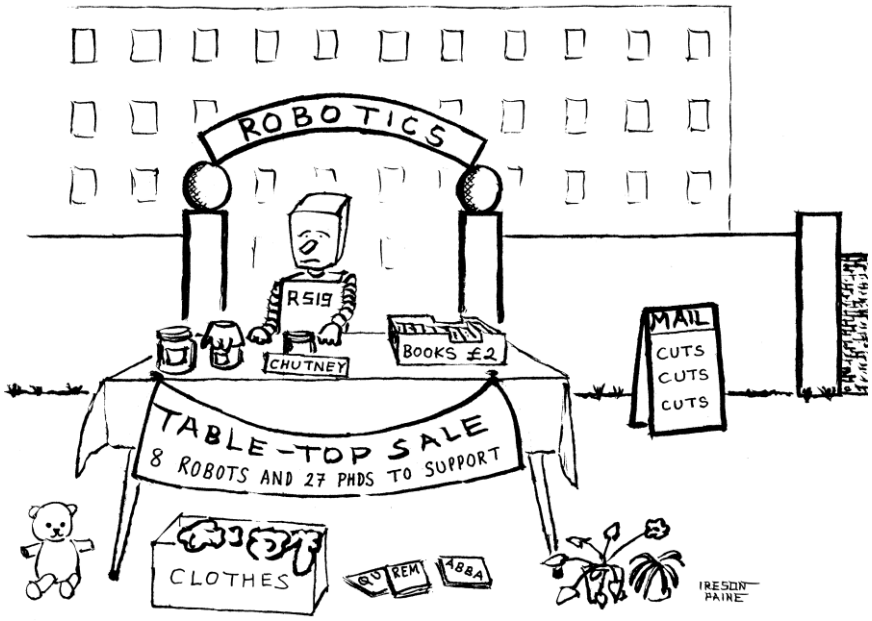
9. Explaining pictorial techniques helps to teach

Teaching these techniques should help novices learn to draw. It will not teach geometrically precise perspective, but it will make drawings three-dimensional, thus more fun and easier to "read." One author to promote this is Bruce McIntyre. The image shows several examples from his *Drawing Textbook* (McIntyre 1998):



10. Non-geometric pictorial techniques: textual anchoring

Added cues need not concern geometry. Thus we can do what Roland Barthes called "anchoring" or "anchorage" (Ludwig n.d.): adding text to convey information that the depiction cannot. So, in my cartoon (Ireson-Paine 2010b), the newsboard saying "CUTS CUTS CUTS" shows the robot seeks funding:

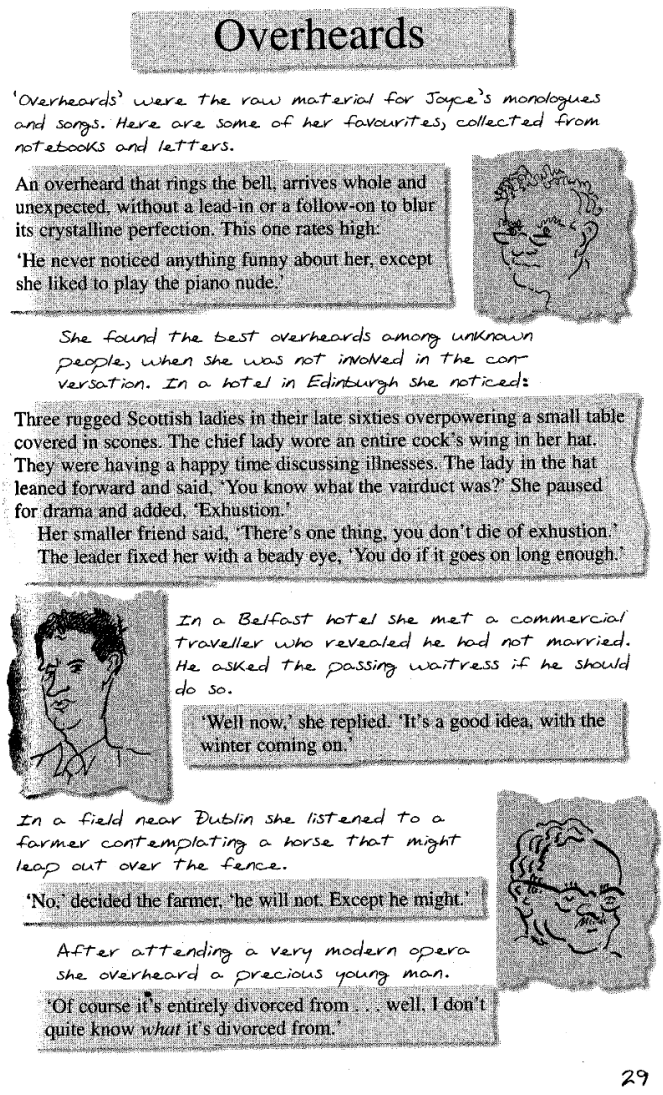


Other uses there and below (Ireson-Paine 2010b) include the labels on the goods, the bee's thought bubble—a pun on spammers' "Make Money Fast"—and the verbs describing its actions:

Textual anchoring may supplement images that are deliberately distorted. Some critics say that Braque and others included text in their paintings: to anchor the picture in reality, despite distortions. The picture below is Braque's *The Portuguese* (The Portuguese n.d.):

11. Distortion and exaggeration as pictorial techniques

Artists also distort to emphasise geometry, as in Joyce Grenfell's second caricature below (Hampton 2004):



Overheards

'Overheards' were the raw material for Joyce's monologues and songs. Here are some of her favourites, collected from notebooks and letters.

An overheard that rings the bell, arrives whole and unexpected, without a lead-in or a follow-on to blur its crystalline perfection. This one rates high:

'He never noticed anything funny about her, except she liked to play the piano nude.'

She found the best overheards among unknown people, when she was not involved in the conversation. In a hotel in Edinburgh she noticed:

Three rugged Scottish ladies in their late sixties overpowering a small table covered in scones. The chief lady wore an entire cock's wing in her hat. They were having a happy time discussing illnesses. The lady in the hat leaned forward and said, 'You know what the vairduct was?' She paused for drama and added, 'Exhustion.'

Her smaller friend said, 'There's one thing, you don't die of exhustion.'

The leader fixed her with a beady eye, 'You do if it goes on long enough.'

In a Belfast hotel she met a commercial traveller who revealed he had not married. He asked the passing waitress if he should do so.

'Well now,' she replied. 'It's a good idea, with the winter coming on.'

In a field near Dublin she listened to a farmer contemplating a horse that might leap out over the fence.

'No,' decided the farmer, 'he will not. Except he might.'

After attending a very modern opera she overheard a precious young man.

'Of course it's entirely divorced from . . . well, I don't quite know *what* it's divorced from.'

29

Notice the chin: a bent U which occludes the left-hand side of his neck. I suspect not all the U was visible and that Grenfell lengthened what was. She might also have pushed the U leftwards to overlap the neck, making occlusion possible.

Quentin Blake exaggerates differently. His graphic language emphasises facial expression, posture, and gesture, including hand positions (The Rose Gallery n.d.):

12. Exaggeration is no deceit

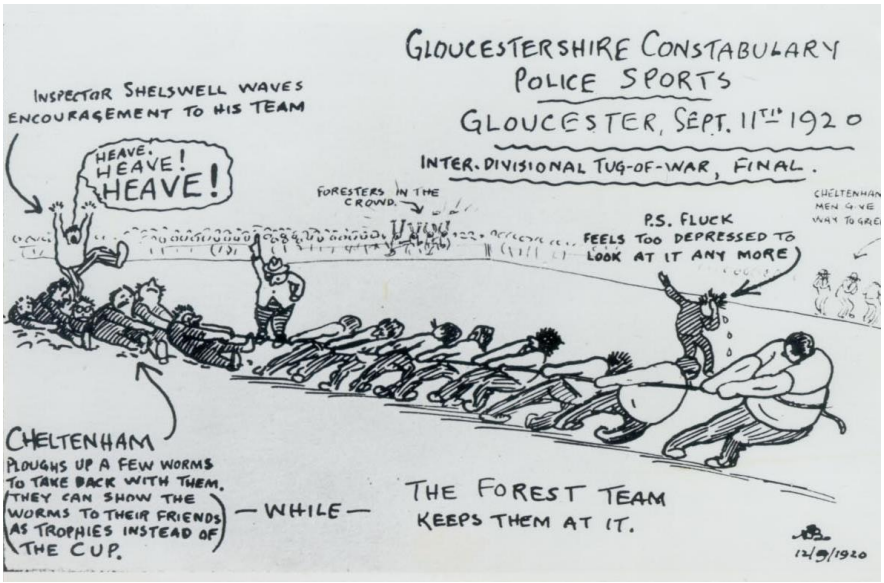
We can argue that the exaggerations above are not "deceit" or "lying," any more than deleting texture or adding lines for form are dishonest. In one way, they push a drawing or painting further from its original scene. However, in another way, they bring it closer by making its effect on the viewer closer to the original scene.

Mathematician Paul Halmos says the same about language. Discussing communication in his autobiography, he writes (Halmos 1985 p. 113) that you may lie a little to make your message clear but should never mislead. For example, consider explaining English governance to a Martian. Saying "England is a monarchy," tells the truth but misleads by implying things that are not true. In contrast, "England is a democracy" is a lie. Nevertheless, it is a better first-sentence summary than the other sentence. It says what is needed as closely as possible, given the listener's lack of knowledge and the available space.

So exaggeration and other pictorial techniques are not lies. They say what must be said as closely as possible, given the constraints of the language.

13. Inflating significant zones

Like detexturing and adding depth cues, inflating significant zones (Ireson-Paine 2019; Hofstadter 1985, 597) compensates for change of graphic language: in this case, loss of detail or resolution. The artist enhances zones critical for recognition, probably at the expense of those not enhanced. Thus below (Gloucestershire Police Archives n.d.), the upraised arms of the "Foresters in the crowd" are emphasised relative to the rest of the body:



14. Compensating for the medium: clouds and blond hair

It is challenging to draw clouds in black ink on white paper. As Len Doust remarks in *A Manual on Sketching Sea, Town and Country* (Doust 1950a, 43):

> When making a simple line drawing, it is usually wisest to leave the sky untouched. You will often be tempted to put in a beautiful cloud formation, but if you do so, you will, nine times out of ten, lose the softness, overdo the tone, and get an unpleasant hardness and solidity; the cloud will jump out of the picture, and your harmony will be lost.

Similar care is needed with blond hair, as in this *Punch* cartoon by J.W. Taylor (Lynch 2008). He reduces the boy's hair to an outline and a hint of locks, compensating for the difficulty of drawing it in detail:

"And don't say 'Oh, what a noble mind is here o'erthrown' every time your father opens his mouth, or I'll stop you going to the pictures altogether."

15. Style as a collection of compensatory triangles

Generalising, I suggest that an artist's style be specified as a collection of compensatory triangles, each describing a particular pictorial technique.

Each triangle can also indicate how extreme its technique is. How much texture does an artist remove? How many creases do they draw? As the pictures below reveal (Chantelle's Blog 2012; Friends NYC 2020), Dr Seuss is extreme regarding creases and wrinkles, and it makes his drawings obscurely unsettling and "boneless," especially as creases appear in skin and fur as well as fabric.

16. Style can be a conscious choice

Some books on drawing advise you not to force a style for yourself; it will gradually come as you learn. That may be partly true because drawing is a physical activity and entails learning neuromuscular habits.

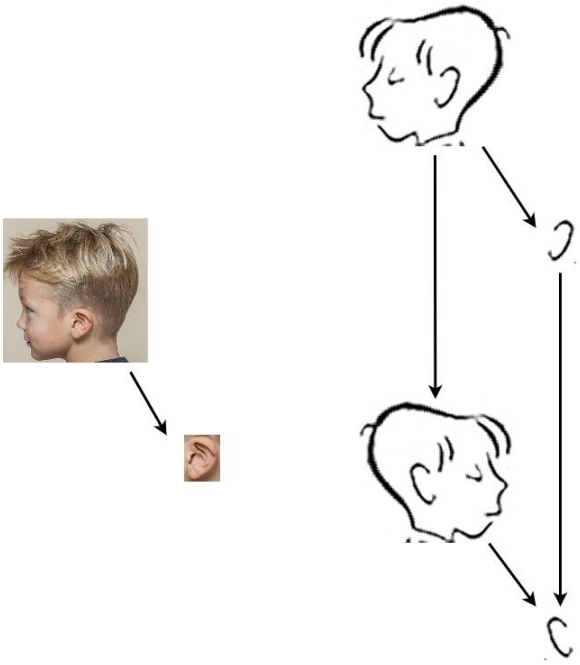
However, style is also about choosing a medium and a graphic language to use with it. Any graphic language will make some things easy to represent and others hard. The hard things can be compensated for by using pictorial techniques. There are trade-offs for each style, and these can be consciously compared. So to that extent, one need not let style happen. One can choose it, analysing the choice as a problem in optimisation.

17. The medium wrecks the message: non-transportability between styles

As noted in §4 and §15, pictorial techniques may create ambiguities or make it harder to depict certain things. This ambiguity leads to my second formulation of style. If a relation can be depicted by one style, how well does it

"transport" to the other? The way I express this may seem to come out of nowhere, but a standard construction in category theory inspires my expression, the "natural transformation." Mathematically analogous examples appear in (Phillips 2021, §2.1; Tsuchiya & Saigo 2021, Figure 5), while (Mannone & Luca 2019, §3) use an identical construction for comparing dance styles.

Taylor cartoon heads as shown in §15. So imagine two cartoonists: J.W. Taylor and W. J. Rolyat. Rolyat does the same, except that he reverses everything he draws. Despite this difference, Rolyat's style precisely mirrors Taylor's:



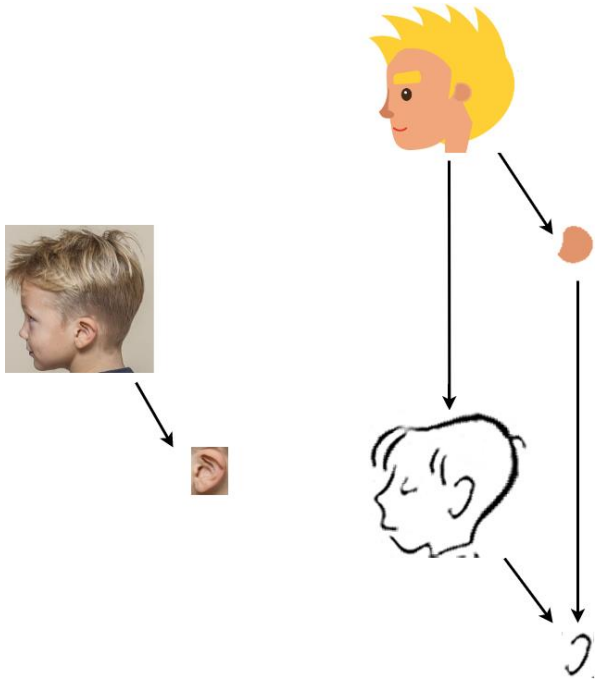
The two-item network on the left above is a schema (Milewski 2015) which describes parts of a scene and how they are related. For simplicity, I consider only one part, the ear. The scene is a blond-haired boy's head (Blond boy n.d.). The diagonal arrow symbolises the relation "part of," i.e., the ear is part of the head.

On the right are two more networks. They work similarly but describe the same head as cartooned by Taylor and Rolyat.

Now consider the parallelogram of arrows. The downward arrows map the items from one style to the other. In other words, they restyle from Taylor to Rolyat. The entire parallelogram says we can get from Taylor's head to the Rolyat ear in two ways. We can select the ear from the original, then restyle it. Alternatively, we can restyle the entire head, then select the ear from the translation.

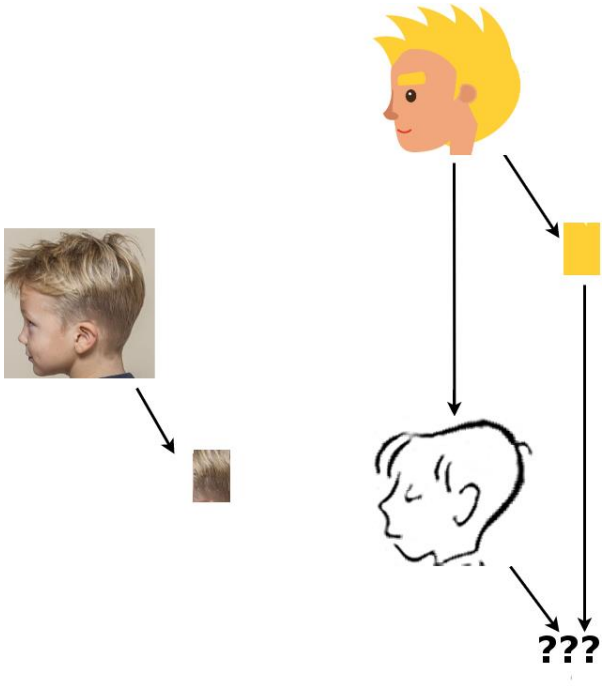
This function is the category-theoretic way of saying that translating between styles does not interfere with the content; i.e., style and content are independent (Libeako 2018). Intuitions on why it means this can be gained from (Ireson-Paine 2021b, Chapter 14), where I describe noughts-and-crosses and two equivalent games. The equivalences mean that moves, pieces, rules, etc., can be translated from one game to another at any point during play without interfering with a game's progress, i.e., a game's "style" is independent of its "content." So both paths do the same thing.

Now consider this diagram:



The first style is now that of a piece of clip-art, modified from (Blond boy 2, n.d.). The second style is Taylor's. As before, both paths around the parallelogram do the same thing, so the style is independent of the content.

However, now consider the hair above the ear:



No item in the second style corresponds to the patch of yellow hair in the first. So Taylor's style has interfered with the content.

Interestingly, this differs from the situation in computing. Computer scientists talk about different data representation methods, e.g., different layouts of tables in a `database`. We can usually `translate` completely between these representations. However, in art, we cannot: medium interferes with message. (However, computer scientists might note that this is not always true of so-called "neural networks." It might be fruitful to apply these ideas to them.)

18. Why mathematise style?

The word "style" gets used loosely in art. Mathematics is the most precise language that we have. By formulating style mathematically, we could make clear precisely what it is.

It would also help us write computer programs that restyle artworks. Today's most popular restyling technique, "deep-learning style transfer," reinvigorated the field after its seminal paper was published in 2015 (Gatys, Ecker & Bethge 2015). One iconic result is pictures of Thurbingen in Germany, restyled to match famous paintings (Mence 2016):

Impressive as this is, it can fail, as shown below. This default is because the programs lack high-level knowledge about style, knowing only statistical summaries of the spatial distribution of texture and pattern. Category-theoretic formulations might give them that knowledge.

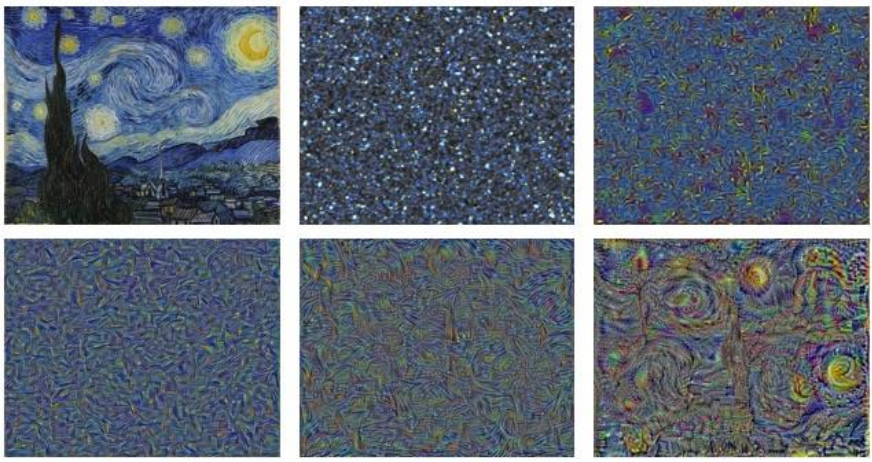
19. When deep-learning style transfer fails

I demonstrated this using the DeepArt website (Gatys et al. n.d.) to restyle photographs of the National Technical University of Athens in the style of the Athenian artist Alekos Fassianos (Ireson-Paine 2019):

The NTUA photos are in the middle, the Fassianos styling images on the right, and the results on the left. It is clear that DeepArt does not understand how to transfer from Fassianos's stylised characters to the real people in the photos. It has not even done an excellent job on the left wing of the NTUA building, putting red stipple from Fassianos's foreground into the wall.

20. Cubism: a test case for theories of style

The above experiment shows that this type of style transfer can fail, and I shall now argue that it will fail when asked to restyle to one style, Cubism. DeepArt represents style as a spatial distribution of patterns at different levels of detail. Mence (2016) demonstrates this by "painting" the levels of style detail it extracts from van Gogh's *The Starry Night* onto blank canvases:

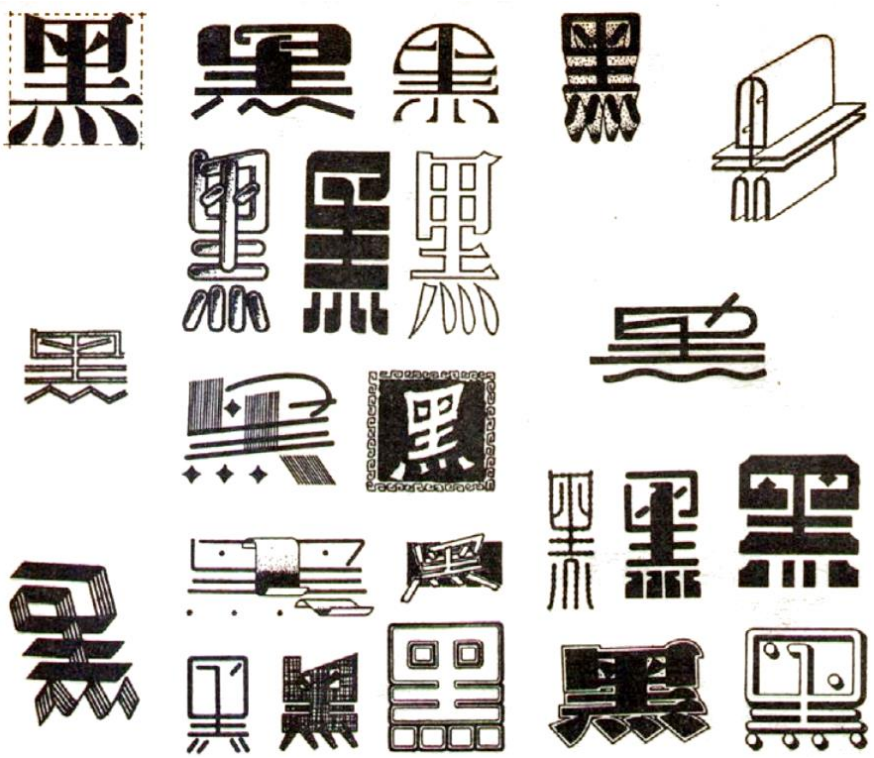


Similarly, the second and third panels below depict style—textures and patterns—learned by the Fritz AI (2021) style-transfer software.

However, Cubist-ising involves more than adding patterns. Thus (Vergo 1980) writes of Cubists using a "mobile perspective": merging different views of the same object even when these were of regions far apart. Likewise, (Gompertz 2012) indicates the importance of multiple viewpoints by noting that Braque and Picasso painted with muted colours to blend them easily. Moreover, for (Hughes 1991), the Cubists see the world as "a network of fleeting events" or "a report on multiple meanings, on process"; a world "set forth as a field of shifting relationships that include the onlooker." It seems very unlikely that DeepArt and related programs could learn to shift and recombine viewpoints in this way. For one thing, there probably is not enough information in the single-viewpoint original image.

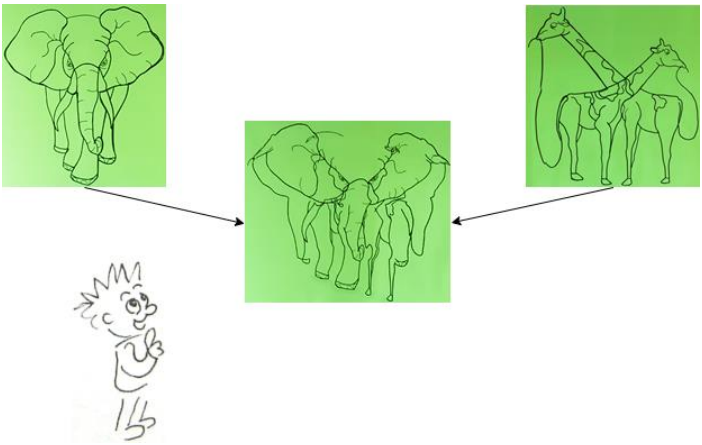
21. Other formulations of style

If Cubism is one test case, typefaces are another. Their simplicity strips the problem of style to its fundamentals. What, for example, unites these renderings of the Chinese character 黑 (Hofstadter 1985 p. 244)?



Such questions arise throughout art and again confirm the need for precise formulations. So how might we go beyond those above?

One way could be to make styles themselves the nodes of a network. We would then study the links between these, asking, for example, which style transfers are invertible. We can restyle Thurbingen as painted by van Gogh, but can we recover the Thurbingen from the van Gogh?



However, how can styles be nodes when they are not "things"? First, category theory lets entire networks be nodes in other networks. So if we can represent styles as networks of relationships, that is a plausible starting point.

Second, style-transfer programs represent style, as shown in the previous section. We could try using these representations as nodes. As I have shown, the programs have defects but might still be good starting points. Promising here is (Chen et al. 2017), a new interpretation of style transfer designed to represent styles explicitly and be easy to analyse.

The explicit representation enables styles to be merged across an entire artwork or in specific regions. This merging is interesting because category theory has an operation called "colimit": a generalised sum that describes how systems such as computer programs acquire function from their parts (Goguen 1992 §3.3). Formulating style fusion as colimit would give us experience by applying category theory to a small and well-defined aspect of style.

Third, we do not need to know what nodes "are," but only how they relate to other nodes. Taking this to its ultimate, we can invoke the "Yoneda perspective" (Bradley 2017), representing an item by its interactions with all the other items. An item is, in a sense, no more than its interactions.

Bradley illustrates a sculpture with a video that, from one angle, looks like a giraffe but from another, an elephant. We can only understand it if we view it from all possible vantage points. This mind-expanding idea forces us to see phenomena not in isolation but as essential components of a more expansive universe.

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Discourse Ethics and Eristic

Abstract

Eristic has been studied more and more intensively in recent years in philosophy, law, communication theory, logic, proof theory, and A.I. Nevertheless, the modern origins of eristic, which almost all current researchers see in the philosopher Arthur Schopenhauer, are considered to be a theory of the illegitimate use of logical and rhetorical devices. Thus, eristic seems to violate the norms of discourse ethics. In this paper, I argue that this interpretation of eristic is based on prejudices that contradict the original intention of modern eristic. Eristic is not an art of being right or winning an argument, but an art of protecting oneself from the one who deliberately violates norms of discourse ethics to gain argumentative acceptance. For this reason, eristic must be seen as a discipline of Enlightenment philosophy and a correlate of discourse ethics. Especially in the age of alternative facts and post-factual politics, this makes eristic a valuable discipline.

Keywords

Discourse Ethics, Communication Ethics, Eristic, Argumentation Theory, Arthur Schopenhauer

Introduction

Discourse ethics aims to analyse forms of rational argumentation and find the ethical principles binding any discourse. Starting from the description of arguments, this kind of ethics develops norms, which serve, among other things, to preserve the righteousness and probity of discourse. Thus, discourse ethics establishes that there are obligatory norms for all speakers within a community of discourse. On the other hand, eristic is often portrayed as a discipline that deliberately violates these obligations since its aim

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is not the probity of discourse but the success and victory of an argument, even by using irrational or unethical means. In short, discourse ethics is described as the art of ethical-rational argumentation but eristic as the art of being right.

In this paper, I will argue that eristic in its original modern form does not contradict discourse ethics. Instead, I will defend the thesis that eristic is a prohibitive technique that takes effect when the norms of discourse ethics are transgressed and violated. Therefore, both theories are particularly relevant in the age of post-factual politics and alternative facts. While the normative dimension of discourse ethics exhorts the reining-in of moral norms in communication, eristic intervenes in an enlightening way where the norms of discourse ethics are deliberately violated. I will thus argue that eristic is not an art of being right, but an art of defending oneself against the one who tries to be wrongfully right. In the following, I will first briefly present the essential basic ideas of discourse ethics (Section 1), then introduce eristic and refer to the seminal work by Arthur Schopenhauer (Section 2) and finally present the relationship between discourse ethics and eristic (Section 3).

1. Discourse Ethics

One of the main theses of the Frankfurt School, which was the primary home of communication and discourse ethics in the 20th century, is that rationality is fundamentally morally neutral or indifferent (Apel 2001, 40). This indifference means that rationality can be used to achieve morally good goals and morally evil ones. Simplified, one could say that descriptive ethics has the task of describing moral forms (about what there is), and normative ethics has the task of establishing the morally good goals as commanded (about what ought to be).

However, since goals can also be achieved through linguistic actions or speech acts (Apel 1994, 158), ethics must refer to physical actions and forms of discourse. Discourse in this sense is a narrowed concept of language since discourse ethics does not primarily look at language as a whole, nor at individual fragments of language, such as the use of certain words in isolation. Instead, discourse ethics refers to arguments put forward within a communication community in which a verbal dispute arises. Therefore, an argument can be understood as a series of interrelated statements (e.g., assertions or justifications) produced to convince an audience of a particular position or overall conclusion (Tindale 2004, chap. 1). Verbal disputes can be

understood as a communication situation in which two or more speakers exchange arguments in contrariety or contradiction to each other (cf. Chalmers 2011).

In its original form, discourse ethics take up Kant's transcendental philosophy and asks about the conditions of the possibility of rational argumentation (Apel 1994, 83-175). In this sense, discourse ethics is initially descriptive ethics since it examines the forms and their conditions that occur in verbal disputes. However, since the question of the condition of the possibility of verbal disputes is a problem of the ultimate justification of the norms of these discourses, deontic ethics evolves from the description. Since the ought is thus already contained in the conditions of being, discourse ethics overcomes the distinction between descriptiveness and normativity expressed in the Humean is-ought problem (Apel 1996, 14ff.).

For discourse ethics, the ultimate justification constitutes a regulative moment: everyone who argues "must consciously affirm his participation in the transcendental language-game of the transcendental communication community at every moment of his life" (Apel 1980, 275). Therefore, one can say that whoever argues wants to be rational and bring about consensus. The decision to accept norms thus begins with the decision to partake in a discourse. For this reason, the arguer presupposes ethical norms, even when they pursue substantively immoral or even unlawful ends in their argumentation.

In the real argumentation community, participants do not always argue morally-rationally, after all, but often purpose-rationally. They pursue goals that are not motivated by the implementation of norms but by achieving specific goals. However, if these goals are to be achieved through linguistic actions, they must, in turn, accept norms that are already presupposed in any form of argumentation. The above-mentioned initial thesis of instrumental reason is thus transformed from the initial pessimistic situation, viz. rationality can also be instrumentalised for immoral purposes, into an optimistic theory. Everyone has to accept moral norms in their verbal disputes in order to be able to communicate meaningfully at all. "Said in another manner: whoever argues seriously has already also accepted a postulate of practical reason or a regulative idea, as is demanded […] and postulated by discourse ethics" (Apel 1994, 208).

From this transcendental philosophical insight into the foundations of argumentation, certain norms can now be derived, which discourse ethics states as normative ethics. Often this list of norms is divided into three areas: (L) a logical, (D) a dialectical, and (R) a rhetorical level. A long list of these

norms and a discussion of some of them can be found in (Stansbury 2009). In the following, only three examples of these norms from the three areas are presented. Some of them will be taken up again in the further sections:

(L1) No speaker may contradict themselves.
(D1) Every speaker may only assert what they believe.
(R1) Every speaker is allowed to question any assertion whatever.

As described above, the fact that argumentation takes place always indicates a possible or emerging verbal dispute. We can speak here of a 'real communication community' (Apel 1980, 280), which we can identify in every form of argumentation and verbal dispute. However, the implicit goal of this real communication community must have in mind an ideal communication community through the already implicit recognition of the norms of discourse ethics. If this ideal communication community has been achieved in the long run (Apel 1994, 208), the dissent of the real communication community has been transformed into a far-reaching consensus. This transformation also names the regulative principle of discourse ethics: the real communication community should become the ideal one, the dissent should become consensus through rational argumentation.

2. Eristic

Already in antiquity, those arts that did not aim at truth, validity, and the observance of norms but the pure success of the argument were called eristic.[1] Eristic gets its name from *Eris*, the Greek goddess of discord and strife. Plato refers to the technique of the sophists in this way (e.g., Soph. 225 c ff.), and Aristotle also speaks of a *syllogismos eristikos* (συλλογισμός ἐριστικός) as a particular case of a fallacy or sophism (e.g., Top. I, 1, 100 b 23-25). Over the centuries, different philosophers, especially Megarics, were repeatedly referred to pejoratively as Eristics. In post-Kantian transcendental philosophy, eristic (as a discipline) is again gaining interest and is presented there (e.g., together with sophistry and pirastic) as a form of dialectic (Herder II, 291). Today's approaches to eristic go back in particular to the classical texts of that time, and the most well-known classical study of eristic to date comes from the philosopher Arthur Schopenhauer (e.g., Nęcki 2019; Marciniak

[11] For an overview of the history of eristic up to Schopenhauer, see Hodges & Read 2010 and Dietz (1994).

2020; Hordecki 2021). Schopenhauer's eristic is frequently used in disciplines such as law (e.g., Rescher 1977, 2; Struck 2005, 521; Stelmach & Brozek 2006; Lübbig 2020), fuzzy logic (Tarrazo 2004), ludics, or Artificial Intelligence (e.g., Quatrini 2008; Fouqueré & Quatrini 2012).

Schopenhauer's original approach follows the above classification of transcendental philosophy. He dealt with eristic in several periods of his work. Schopenhauer's best-known treatise on eristic is a handwritten fragment that dates back to 1830/31. This fragment does not bear a clear title, but it was first published entitled *Dialectic* (Schopenhauer 1864), then *Eristic Dialectic* (Schopenhauer 1970), and finally there is the well-known *The Art of (Always) Being Right* or *The Art of Winning an Argument* (Schopenhauer 1983; Schopenhauer 2012). The last title, in particular, has led to many misunderstandings, resulting, among other things, from the fact that Schopenhauer was generally misinterpreted as a pessimistic and life-denying philosopher. However, before I try to clarify this misunderstanding or misinterpretation in the next section, I would like to outline this text's contents briefly .

The fragment offers a short historical-systematic part on logic and dialectics and about forty argumentative artifices, so-called *stratagems* or *strategemata* (cf. Chichi 2002, 169, note 29) partly with practical case studies. While the first part clarifies the status of eristic (esp. concerning logic and other philosophical disciplines), the actual eristic is found in the second part. This second part can also be divided into two sections: the first one (Schopenhauer 1970, 677f.) establishes a "basis" and thus provides "the basic framework, the skeleton of every disputation." This is followed (ibidem, 678-695) by the 38 artifices or strategemata, which can again be divided into three parts by subsuming the strategemata 7–18 under the *erotematic*, i.e., the Socratic or question-using method (Chichi 2002, 177). For an orderly presentation, we can therefore speak of pre-erotematic (No. 1–6), erotematic (No. 7–18), and post-erotematic (No. 19–38) strategemata. Chichi (2002, 177f.) offers further classification criteria and a well-elaborated table of all art that grasps with their function and their respective Aristotelian equivalents (ibidem, 171-175). Struck (2005) provides current case studies that prove the practical relevance of Schopenhauer's dialectic.

An excellent example of such an artifice is No. 20, called *fallacia non causae ut causae*. Speaker *A*, who applies this stratagem, first constructs a conclusion, which is the goal of their argumentation. *A* uses the above-given rule

R1 for this[2] but violates D1 in the course of the argument since *A* knows that the conclusion does not necessarily follow from the premises. For this very reason, *A* also uses stratagem 20 and not a valid deduction. In other words, *A*'s intention is that the speaker *B* accepts the conclusion, 'no matter what the price.' First, *A* gradually gives premises to *B* in the form of questions. If *B* has then confirmed *A*'s questions, *A* now draws the conclusion themselves, which *A* assumed *B* would neither have accepted as a question nor put forward as a statement themselves (since the inference from the premise to the conclusion is not correct).

Stratagem 20 can be thought of as something like the following scheme. *A*: "You would say that p is the case, wouldn't you?"—*B*: "Yes, I think so."—*A*: "And you would also say that q is the case, wouldn't you?"—*B*: "Yes, q may be the case."—*A*: "Well, then we have r, because you know that r follows from p and q!"

Schopenhauer's eristic not only has the peculiarity of offering a list of strategemata constructed according to a similar scheme as trick 20 just presented. Some of his treatises on eristic also use Eulerian diagrams, often mapping the relation of more than 30 concepts, which can then be read as graphs (cf. Moktefi 2020; Moktefi/Lemanski 2018). These diagrammatic techniques appear above all in § 9 of his main work, *The World as Will and Representation* (1819), and in the so-called *Berlin Lectures* that Schopenhauer wrote in the 1820s (cf. Dobrzański/Lemanski 2020; Lemanski/Dobrzański 2020). Figure 1, for example, shows how the semantics of concepts can be constructed so that one of two contradictory outcomes can be chosen. In the case of Figure 1, the two contradictory argument goals are: (1) "travelling is something evil," (2) "travelling is something good." One starts from the concept of 'travelling' in the middle and constructs arguments using concepts that tend to be 'evil' (right side) or 'good' (left side of Fig. 1).

This technique can also be combined with the stratagem 20 given above. For example, if *A* wants to argue for (1), one can imagine the following scenario: *A*: "You would say that travelling is expensive, wouldn't you?"—*B*: "Yes, I think so."—*A*: "And you would also say that something expensive causes loss, wouldn't you?"—*B*: "Yes, you could say that."—*A*: "And you would also say that if you have a lot of loss, you become poor, right?"—*B*: "Right."—*A*: "And being poor is something bad or evil, right?"—*B*: "Yes, definitely."—*A*: "Well, then it's clear that travelling is something evil!"

[2] Here, of course, it must be mentioned that R1 is not used as a request, but as a suggestive question.

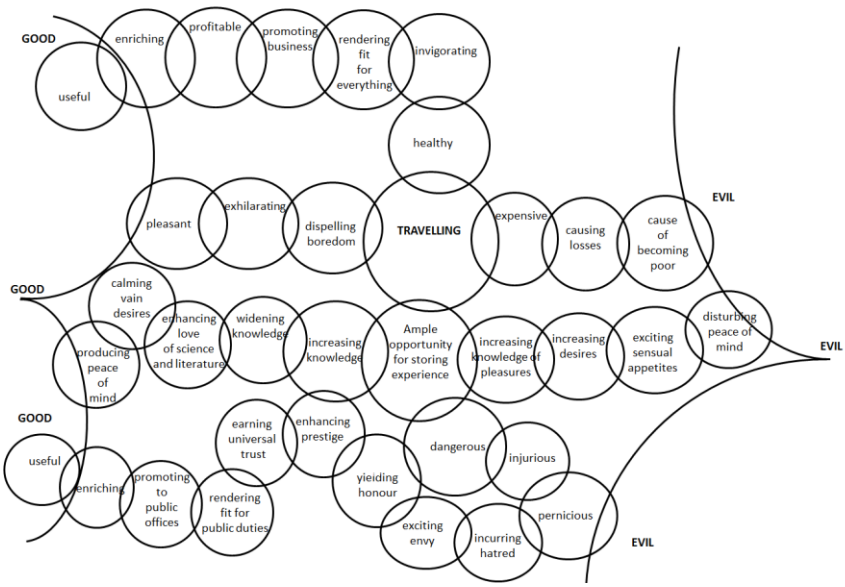

Fig. 1. Schopenhauer 2010, § 9

As Schopenhauer (1913, 364) says, many techniques in which discourse ethical norms are deliberately violated are based on conceptual shifts: for example, in the diagram, one sees only intersections of conceptual spheres, while in the verbal dispute, it is suggested that these are real subsets (e.g., $p \subseteq q$ instead of $p \cap q$). We must therefore assume that *A* chose stratagem 20 because *A* knew that there is actually no necessary conceptual or inferential relationship between travelling and something evil. Since *A* could not present the deductive derivation convincingly, *A* asks *B* to confirm the premises so that the conclusion appears more convincing. In doing so, however, *A* deliberately used R1 but violated D1.

3. Eristic as a Complement to Discourse Ethics

In this concluding section, I will argue for understanding eristic as a complement to discourse ethics. To this end, I will show that Schopenhauer did not understand eristic as an art of being right, but as an art of protecting oneself from the one who wants to win an argument (no matter what the cost). Thus, eristic already presupposes a violation of the norms of discourse ethics (such as D1 in the above-discussed example). In other words, as long as the real communication community has not been transformed into an

ideal one, some speakers repeatedly violate the norms inherent in argumentation. So that interlocutors are not helplessly exposed to these moral violations, there must be a discipline to clear up such abuses. This means of elucidating a deliberate violation of norms is eristic.

Schopenhauer's eristic has long been misunderstood as the art of being right or winning an argument. Schopenhauer himself (Schopenhauer 1970, 668, 671, 675) introduced the wording of those titles (the art of being right, *et cetera*), which was meant as a translation of the Greek concept *eristike techne* (ἐριστική τέχνη). However, a more direct translation would have been "the technique of verbal dispute." However, the title for Schopenhauer's writing only came into use in the late 20th century and gave the work a significant boost in popularity. Although Schopenhauer, as mentioned above, uses the expression "the art of being right" himself in the fragment, the idea of the modern title is probably borrowed from the best-selling book by Karl-Otto Erdmann (*Die Kunst Recht zu behalten*) and is, therefore, nothing more than a marketing strategy (Gutenberg et al. 2020). After all, these titles suggest a powerful tool that attracts renewed attention among lawyers, managers, or business people and attracts attention in the age of post-truth politics and alternative facts. Politicians and influencers who do not adhere to rational values but only want to achieve goals in a purposive rational way see this writing as a suitable means for their purposes.

Since Schopenhauer's late writings, in particular, have been misinterpreted since the late 19th century as pessimistic and life-denying (Beiser 2018), it is still evident to many recipients today to interpret Schopenhauer as an opponent of discourse-ethical norms. However, the opposite is the case. As can be seen especially in Schopenhauer's early work, his philosophy is not in the service of a pessimism turned away from the world and norms, but in the service of the Enlightenment. As he emphasises several times in his main work and also in connection with eristic, he writes for "the culture of a mature age" (Schopenhauer 2010, 298): "because this 19th century is a philosophical century", which means "that the century is ripe for philosophy" (ibidem, 70). For this reason, Schopenhauer even renounces normative ethics (such as discourse ethics) and instead restricts his philosophy to descriptive ethics:

> The perspective we have adopted and the method we have specified should discourage any expectation that this ethical book will contain precepts or a doctrine of duty; still less will there be any general moral principle, a universal formula, as it were, for generating virtue. There will be no talk of an 'unconditional ought' […]. We will not talk about 'oughts' at all: that is how you talk to children, or to nations in their infancy […] (ibidem, 298).

For humankind, which has come of mature age, is not to be prescribed by philosophy or religion, since human beings themselves have a natural reason that enables them to recognise what is right and wrong. In ethics, philosophy should only provide a conceptual repertoire. Thus, the philosopher only offers the recipient a precise conceptual tool to classify facts and actions. On the other hand, evaluating these classified concepts is the responsibility of the person who has come of a mature age.

Despite these seemingly optimistic tendencies concerning the zeitgeist, Schopenhauer is well aware of the downside of the philosophy of reason. Schopenhauer shares some insights with the Frankfurt Institute for Social Research, which led to intensive research by Max Horkheimer, Theodor W. Adorno, and Alfred Schmidt (e.g., Birnbacher 2002; Jeske 2018): apparent anticipation of the theory of instrumental reason can be seen, for example, in Schopenhauer's repeatedly stated thesis "that rational action and virtuous action are two completely different things; that reason can find itself in alliance with great wickedness just as well as with great goodness" (Schopenhauer 2010, 112).

If reason (similar to critical theory) is a neutral instrument and can be used for good as well as for evil, and if, moreover, every human being possesses an individually strong capacity for reason, then it is helpful to establish a scientific discipline such as eristic or dialectics including "general strategemata" that protect against the dishonest use of rational arguments. "The main task of scientific dialectics in our sense is, therefore, to tabulate and analyse those tricks of dishonesty in discourse: so that in real debates, they may be recognised and defeated at once" (Schopenhauer 1970, 676; my transl.).

Schopenhauer's text is not always clear in his presentation of the strategemata. Several times in the examples of the strategemata, there is talk of an 'I,' which sometimes takes the place of the unethical arguer (the perpetrator), sometimes the place of the discussion partner (the victim). However, on the one hand, one must consider that Schopenhauer's most famous fragment on eristic was not intended for print (Hordecki 2021, Sect. 2). On the other hand, one repeatedly finds normative-seeming formulations in Schopenhauer's complete oeuvre, which the author himself did not intend to be normative but descriptive. The above quotation clearly shows that the aim of eristic is not to set up techniques for unethical argumentation but to protect oneself from unethical arguments.

Thus, eristic dialectics is the descriptive reverse of the normative forms of discourse ethics: if the norms of discourse are violated, the person who has come of mature age recognises the transgression of norms thanks to the

classified strategemata. They now have the conceptual repertoire to defend themselves against this violation of norms. This defence can be done, for example, by naming and pointing out the stratagems that contradict the norms of discourse ethics. So, in our example given in Section 3, *B* could point out to *A* that *A* is violating norms of discourse because *A* has committed a *fallacia non causae ut causae*. By using diagrammatic techniques, *B* also has a means of showing to third parties why argument (1) 'travelling is something evil' is not necessarily valid. Finally, using other premises, one could also argue for the opposite (2). However, if *A* were to concede this, they would have to revise or at least relativise their one-sided conclusion in order not to come into conflict with norm L1.

An eristic dialectic in the Schopenhauerian sense is thus not an 'art of being right,' but a descriptive catalogue of stratagemata and a diagrammatic tool for purely preventive purposes (cf. also Chichi 2002, 165, 170; Gutenberg et al. 2020). Strictly speaking, eristic thus conveys the art of defending oneself against those who want to be right by dishonest means. According to Schopenhauer, such an approach is an "uncultivated field" (Schopenhauer 1970, 676). He had only put together a few initial drafts for such a scientific eristic, which can be seen as a supplement to discourse ethics. If one were to elaborate on Schopenhauer's eristic further, it would thus make sense to analyse the strategemata and the norms of discourse ethics that are violated by these strategemata. Particularly in our day and age, when the norms of rational discourse are increasingly being violated, more intensive exploration of eristic seems once again to be a significant undertaking.

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On the Plurality of Styles: *Spherics*, The Isoperimetric Problem

Abstract

This paper studies the question of plurality of mathematical styles, i.e., whether a fundamental mathematical work is characterised by a single style or by a multitude of styles; and, whether the unity of a subject in mathematics in its development is the outcome of a single style or several styles. The question is studied (a) within a single mathematical work and (b) through the study of the same problem over time and illustrated on Menelaus's *Sphaerica* and the isoperimetric problem.

Keywords

(Plurality of) mathematical styles, Gilles-Gaston Granger, the isoperimetric problem, the style of Menelaus's *Sphaerica*, the cosmological style, Al-Khāzin's geometric style, Ibn al-Haytham's infinitesimalistic style, the style of the calculus of variations, the style of synthetic geometry

Introduction

Historians of science agree that one of their main tasks is the reconstruction of scientific traditions. The task may seem easy because most traditions are represented by prominent names and distinctive features that make them recognisable. However, as soon as they are engaged in this task, they discover that it is a deceptive appearance that dissipates. Isn't it a characteristic

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of a scientific tradition to diversify and recreate itself according to the succession of the various authors and the rise of novel questions, thereby thwarting any reconstruction attempts?

During the last century, in their attempt to describe and analyse these facts, some philosophers of science have forged certain concepts, such as the *Denkform* by Ernst Cassirer (1874–1945), the "normal science" by Thomas Kuhn (1922–1996), the *épistémè* by Michel Foucault (1926–1984), and others.

Gilles-Gaston Granger (1920–2016), who had vast experience in the history of economics and the variety of schools that exercise it, deep knowledge of social mathematics going back to Marquis de Condorcet (1743–1794) and significant contribution to linguistics, has found in the concept of *style* a heuristic means to delineate traditions and carve out styles within a single tradition. This enables us to grasp the type of rationality that characterises each style. Indeed, it was due to the concept of style, which has proven valuable in literature and art history. Behind the variety of forms and mutations that shape a tradition, we can grasp those elements which characterise a style and define its identity. However, this undoubtedly perceptible, although fleeting and elusive note, remains to be heard, which alone makes it possible to put an individual work into perspective and grasp its meaning.

One tradition can then be distinguished from others. For example, we can distinguish the tradition of the method of indivisibles from the other traditions of infinitesimal mathematics of the 17th century or that of the marginalists from other economic traditions of the 19th and 20th centuries (such as those of Karl Marx or Alfred Marshall).

Through style, one can also isolate different currents within the same tradition (Bonaventura Cavalieri and Gilles de Roberval, in the first case; William Stanley Jevons and Léon Walras in the second case), or in a single work, when one identifies the traces of different traditions. Thus, we avoid the analogy and the global viewpoint that crushes differences to see only similarities.

1. Granger's Definition of Mathematical Style

If we confine ourselves to the history of mathematics, Granger defines the concept of mathematical style in the following way:

> The style appears to us here on the one hand as a way of introducing the concepts of a theory, of connecting them, of unifying them; and on the other hand, as a way of delimiting what intuition contributes to the determination of these concepts (Granger, 1968, 20).

To illustrate this definition, he studied several geometric examples, which he calls by the names of individual mathematicians, each of whom embodies the relevant geometric style: Euclidean, Cartesian, Desarguian, Grassmannian. Naturally, the whole study is done with precision and talent.

I want to start with Granger's definition to pose the question of the plurality of styles. The question is whether a fundamental mathematical work is distinguished by a single style or by several styles, and, on the other hand, whether the unity of a subject of mathematics during its evolution lies in one style or is an outcome of several styles. I, therefore, pose this question of the plurality of styles, firstly, within the same mathematical work, secondly, through the study of the same problem over the centuries. For the fundamental work, I chose the *Sphaerica* of Menelaus of Alexandria, and for the problem, I took the *isoperimetric problem*. The subject of study is the circle and the sphere in both cases.

2. The Style of Menelaus's *Sphaerica*

Menelaus of Alexandria (c. 70–40 CE) wrote a treatise entitled *Sphaerica (Spherics)* following the model of Euclid's *Elements*, that is, by chaining the propositions in a rigorous logical order. In this work, he studies the geometry of the sphere *per se*, not only in the physical three-dimensional solid, as in the *Elements.* Menelaus, unlike Euclid, examines the intrinsic properties of a spherical surface. In other words, he studies the geometry of the sphere as a chapter of solid geometry that his predecessors developed. He mainly focuses on the properties of duality and polarity, properties that do not characterise plane figures.

In his study, Menelaus admits Euclid's axioms and postulates, except for the fifth, the Parallel Postulate. He adopts the Euclidean definitions of geometric concepts, i.e., the definitions of the sphere, its centre, its circles, its diameters, its poles, etc., and adds three new definitions: those of the *spherical triangle*, the *quadrangle figures* on the sphere, and the *right*, *acute* and *obtuse angles* on the sphere.

If the definition of Granger already mentioned is invoked in this regard, the "way of introducing the concepts of a theory" is here quite different from that of Euclid, for, in this new geometry, the sum of the angles of any spherical triangle is greater than two right angles, disjoint lines do not exist, and any two lines intersect into two points. This case is certainly no longer the "style" of Euclidean plane geometry nor that of the stereometric books of Euclid's *Elements.*

From a mathematical point of view, this geometry is intimately linked to hyperbolic geometry, invented more than a millennium and a half later. It took centuries for the spherical geometry to be grounded on a system of axioms.

If we now consider the second part of Granger's definition, "a way of delimiting what intuition contributes to the determination of these concepts," again the style of Menelaus proceeds from that of Euclid: in fact, Menelaus banishes from spherical geometry the use of demonstration by *reductio ad absurdum* and keeps only the direct demonstration; moreover, he rejects the Euclidean demonstration by *application of areas*.

In short, in Menelaus's spherical geometry, we face the first non-Euclidean geometry, built from Euclid's axiomatic but excluding the Parallel Postulate and two methods of demonstration. Is it possible to discuss the Euclidean style, appropriately identified by Granger with the plane-geometric Books of the *Elements?* Certainly not. However, to describe the style of Menelaus as non-Euclidean would be a little stretched since he preserves what Euclid had abandoned. Thus, we face a mixture of two styles, a combination of the Euclidean style with some variety of non-Euclidean style. It could have been the first intuitionist style if Menelaus had always derived his constructions solely from the definitions. However, he sometimes does things differently, for example, in the first Proposition of his Book, which deals with the construction of an angle equal to a given angle. Unlike most of the propositions in Menelaus's *Sphaerica,* this proposition is proven based on Euclid's solid geometry; therefore, it is not a demonstration of spherical geometry. The reason is that Menelaus gives the Euclidean definition of the angle: the angle between two sides of a triangle at the top is a dihedral angle formed by the two planes that contain both sides; this requires starting with a Euclidean-style construction. So we cannot talk about a single style but a mixture of two styles, the second of which is not still perfectly advanced. This combination is imposed by the nature of the object studied by Menelaus: the sphere, regardless of the physical space.

3. The Question of the Plurality of Styles

I now turn to the second part of the question of plurality of styles, to the problem of the conceptualisation of the style of the same object throughout history. This time I borrow my example from geometry to stay close to Granger's choices. The examination of the isoperimetric problem allows us to see the succession of several styles, which fit together during the study of the same mathematical subject.

There are several reasons for the choice of the isoperimetric problem:

1. As already said, this problem belongs to the area from which Granger chooses his examples.
2. It concerns an ancient problem, like the example of Euclid chosen by Granger.
3. This is an example of the search for extremity values, hence its difficulty.

In a word, it is about to show that, of all the plane figures of a given perimeter, the circle—that is, the disk—has the greatest area; and that, of all the solids with the same total surface area, it is the sphere that has the greatest volume.

3.1. The Cosmological Style

At first glance, the search for extremity values was interesting to astronomers. They needed them to establish the sphericity of the heavens and the size of the world, to show the absolute perfection of their form. Mathematicians were called to demonstrate these properties and establish this cosmological fact. Moreover, this proposition about the circle and the sphere is intuitively evident, so that it may seem pointless to give a demonstration. However, the "delimitation of the intuitive contribution in the determination of concepts," as Granger says, has proven to be a very long and challenging task. I will outline his achievements briefly.

In any case, the problem of isoperimetric and isepiphanic figures appears to have a long history related to the cosmological perspective; this perspective made the problem perpetual and fruitful. Its wide diffusion is undoubtedly due to the revival of the first book of the *Almagest* and its commentary by Theon of Alexandria.

Ptolemy presents as an achievement of geometry the following result:

> Since, among different figures with equal perimeter, those with more sides are greater, the circle is the greatest of the plane figures, and the sphere is the greatest of the solids, and the heavens are the greatest of the bodies (Heiberg 1898, 13, lines 16-19).

However, he provides no proof. The commentators of the *Almagest*, since Theon of Alexandria, could no longer ignore such a formula without providing proof. Other mathematicians have shown interest in this problem, such

as Heron of Alexandria and Pappus of Alexandria, in the fifth book of *The Collection.*[1]

Two relatively late testimonies agree on the attribution of the study of this problem to Zenodorus.

The first testimony comes from Theon of Alexandria, who states:

> We will prove this in an abbreviated way, drawn from Zenodore's demonstrations in his treatise *On Isoperimetric Figures* (Περὶ ἰσοπεριμέτρων σχημάτων) (Théon 1936, 33).

The second comes from Aristotle's commentator, Simplicius, who writes:

> It has been demonstrated, at least before Aristotle, whether it is true that he uses it as a proven truth, and by Archimedes, and in more detail by Zenodorus that among the isoperimetric figures the greatest is, among the plane figures, the circle, and among the solid figures, the sphere (Heiberg 1894, 412, lines 12-17).

Traces of the study of isoperimetric figures in Aristotle or Archimedes were searched for in vain. Simplicius agrees with Theon in attributing Zenodorus of the first extensive study. Zenodorus lived, most probably, after Archimedes and before Pappus and Theon; he must have lived between the 2nd century BC and the first half of the 4th century. Pappus (first half of the 4th century) quotes the first proposition from Zenodorus's book, and Theon (second half of the same century) summarises this book. However, the inaccuracy concerning Zenodorus's life dates prevents us from knowing with certainty whether the latter had written his treatise to justify Ptolemy's not yet demonstrated assertion.

3.2. Al-Khāzin's Geometric Style

Theon's text, which reports Zenodorus's results, and the *Almagest* were known in their Arabic translation by the 9th-century mathematicians and astronomers of Baghdad who initiated a new tradition of geometric research, notably by the philosopher and scholar al-Kindī. However, al-Khāzin and Ibn al-Haytham are recognised today as the leading representatives of this tradition. (Rashed 1993). The analysis of the works of these two mathematicians reveals a great distance between them.

[1] Cf. P. Ver Eecke's translation (1933, I, 239 sq.).

Al-Khāzin is a mathematician of the first half of the 10th century. He is known for his work in algebra and the Diophantine analysis for integers. He also starts with Ptolemy's quotation in his study of isoperimetric and isepiphanic figures. He proposes establishing Ptolemy's result not by computation but by using geometry. The guiding idea, of which al-Khāzin seems to be fully aware, is that of all convex figures of a given type (triangles, parallelograms, rhombuses, etc.), the more symmetrical one assumes an extremum for a certain magnitude (area, area ratio, perimeter, etc.). He proceeds in the following way: he fixes a parameter and varies the figure keeping it symmetrical about a definite straight line. Thus, by fixing the parallelogram's perimeter, he transforms it into a rhombus, keeping it symmetrical about its diagonal; the area increases in the process. With the help of several lemmas, al-Khāzin establishes the isoperimetric property of the regular polygons before finally passing over the theorem on a circle. He then shows the isepiphanic property with the help of regular polyhedra:

> Of all the convex solids with the same area, the sphere is the one with the greatest volume (Rashed 1996, 798).

We view in al-Khāzin two transformations: one is that of the object, the other is that of the style. Henceforth, the circle does not belong to the domain of plane geometric figures but falls under a class of them: the class of convex figures. Similarly, the sphere belongs to the class of convex solids. The style is no longer geometric in the broad sense, but it focuses on the inequalities necessary to research the geometry of convex domains. This research on the properties of convex figures will be one of the main themes of this subject throughout its history.

3.3. Ibn al-Haytham's Infinitesimalistic Style

About half a century later, the mathematician Ibn al-Haytham (d. after 1040) devoted a voluminous treatise to this problem. This treatise belongs to a series of works on the quadrature of curved surfaces and the cubature of solid curves. The mathematical context is no longer the same: it is shifted to the extremal properties of which Ibn al-Haytham was interested and, to study them, he combines infinitesimal methods and methods of projections. He departs from his predecessor in search of a "dynamic" demonstration. He then wrote his treatise on isoperimetric figures, which was at the forefront of contemporaneous mathematical research and for the following several hundred years.

Ibn al-Haytham begins with a quick examination of the case of plane figures. Just like his predecessor al-Khāzin, he compares regular polygons of the same perimeter and several different sides and demonstrates that

i. There are two regular polygons of the same perimeter; the one with the greatest number of sides has the greatest area.
ii. If a circle and a regular polygon have the same perimeter, then the area of the circle is greater than that of the polygon.

Unlike all his predecessors, Ibn al-Haytham uses the first property to establish the second, considering the circle as the limit of a sequence of regular polygons. He uses the properties of the upper bound; it is in this that his approach is "dynamic." It is noteworthy that in his demonstration, he assumed the existence of the boundary—the area of the disc—which Archimedes obtained in his *Measurement of a Circle*.

The second part of his treatise is devoted to isepiphanic figures. It opens with ten lemmas, which constitute the first proper treatise in the history of mathematics on the solid angles, which I will pass over in silence. In any case, these lemmas allow him to establish the following two propositions:

1. Of two regular polyhedra with similar faces and the same total area, the one with the greatest number of faces has the greatest volume.
2. Of two regular polyhedra with similar regular polygon faces inscribed in the same sphere, the one with the greatest number of faces has a greater area and greater volume.

Therefore, we observe that Ibn al-Haytham starts from the regular polyhedra. The two propositions I have just mentioned apply only to the case of tetrahedron, octahedron, and icosahedron since the number of faces of a regular polyhedron with square or pentagonal faces is fixed (6 or 12). However, Ibn al-Haytham's intention is clear from the above: from the comparison between polyhedra of the same area and a different number of faces, establishes the extremity of the sphere, i.e., approaches the sphere as the limit of a sequence of inscribed polyhedra. Nevertheless, this dynamic approach clashes with the finitude of the number of regular polyhedra, and I claim this fact remains incomprehensible on the part of a great mathematician, who knew Euclid's *Elements* better than anybody else. Nevertheless, this failure is compensated by a great success: the solid angle theory.

Ibn al-Haytham's treatise is far from the two previous styles, the cosmological and the geometric. Moreover, Ibn al-Haytham undertakes another study on the extremities in this new spirit. He compares different convex curves in a circular segment, considering that the length of each curve is the upper bound of the inscribed polygons, thus reducing the comparison between the curves to that between the polygons.

With Ibn al-Haytham, the extremal properties of figures and solids are studied, to which are now added those of the curves. The style changes accordingly and becomes infinitesimalistic on convex objects.

3.4. The Style of the Calculus of Variations

Going even further than Ibn al-Haytham was not possible until the foundation and the rise of differential calculus at the very end of the 17th century and the beginning of the 18th century, or more precisely with the first steps of the *calculus of variations*. The isoperimetric problem will continue to change form and become a problem for finding a curve, or a family of curves, that makes maximum or minimal the magnitude associated with each curve of a given set of curves. This problem started with Johann Bernoulli's (1667–1748) challenge of the mathematicians in June 1696 in a form that reproduces the famous *brachistochrone problem*:

> Given two points *A* and *B* in a vertical plane, what is the curve traced out by a point acted on only by gravity, which starts at *A* and reaches *B* in the shortest time? (Bernoulli 1696, 269)[2]

Jacques Bernoulli had shown in 1697 that this curve is a *cycloid* (Bernoulli 1697, 211).

The isoperimetric problem is better studied on a different ground than the original cosmological perspective. This latter approach had run out, as we showed with al- Khāzin and transformed with Ibn al-Haytham. With the Bernoulli brothers, it is already a problem of calculating variations that their successor, Euler and afterwards Lagrange, will establish. Indeed, the study of

[2] "Datis in plano verticali duobus punctis *A* et *B*, assignare mobili *M* viam *AMB*, per quam gravitate sua descendens, et moveri incipiens a puncto *A*, brevissimo tempore perveniat ad alterum punctum *B*." (Given in a vertical plane two points *A* and *B*, assign to the moving [body] *M*, the path AMB, by means of which—descending by its own weight and beginning to be moved [by gravity] from point *A*—it would arrive at the other point *B* in the shortest time).

the preceding problem and those investigated by the calculus of variations led to differential equations for each problem found by Euler. The latter attempted to resume the problems and unify the methods of solution. Thus, the considered problem appears to require the determination among the curves the length $L = \int \sqrt{1+y'}dx$ for which the area $\int ydx$ is maximal (Euler 1744). However, an extremum may not be found when none of the curves of the solution gives an extremum. The difficulty raised by the existence of extremum will accompany the calculus of variations over a long period of its subsequent history.

3.5. The Style of Synthetic Geometry

Since the end of the 17th century and the 18th century, the isoperimetric problem has been studied using variational methods, such as Euler, Lagrange, and others.

A return to geometric methods was made from the beginning of the 19th century with Jakob Steiner (1796–1863), who introduced a geometric construction known as *Steiner symmetrisation*.

Going back to the original text:

For each different area of the circle and each direction of the line, a new smaller isoperimetric area is associated. These are geometric constructions in which, starting from a figure that is not a circle, one associates either a figure of the same perimeter but of the larger area, or a figure of the same area but of the smaller perimeter; the area and the perimeter of the circle remain invariant by these constructions. Steiner concludes that the theorem is proved for the circle, i.e., that, among the curves that enclose a given area, the circle has the smallest perimeter.

Let *L* be the perimeter of a closed curve in the plane and *S* the area it contains; then the isoperimetric problem requires to

> *Determine among all closed curves of length L the one with the greatest area and show that the solution is the circle.*

The *isoperimetric deficit* of a curve is defined by the ordinary inequality:

$$\frac{L^2}{4\pi} - S \geq 0 \qquad (*)$$

and it is shown that equality is valid only for the circle.

Steiner (1971) gives five demonstrations, but every time he assumes the existence of an extremum. This demonstration means it implicitly assumes that, in all isoperimetric figures, there is one that has the maximum area.

With Steiner, the isoperimetric problem, such as the isepiphanic problem, can be expressed by isoperimetric inequalities like (*). His research aims to give basic demonstrations of these inequalities without assuming or demonstrating the existence of a maximum figure. He achieved this goal by improving the isoperimetric inequalities, that is, by showing that in the second member of inequality, where there is zero, a positive quantity can be substituted in general and that it can be cancelled only in the cases of the circle or the sphere. This process also avoids the notion of limit, except in defining the figures' perimeter, area, and volume.

The style is now that of synthetic geometry.

Following Steiner, in 1905, Felix Bernstein (1878–1956) demonstrated other inequalities, and Danish mathematician Tommy Bonnesen (1873–1935) published a book entitled *Les Problèmes des Isopérimètres et des Isépiphanes* (Bonnesen 1929) in which he demonstrated inequalities such as:

$$\frac{L^2}{4\pi} - S \geq \left(\frac{\pi}{4}\right)\left(R - r\right)^2$$

where R and r are the rays of the greatest circles, respectively circumscribed to and inscribed in the convex curve L. We immediately see that if $R = r$, we have equality for the circle.

As can be seen, the isoperimetric problem, in a way at the origin of the calculation of variations at the beginning of the 18th century, became the object of the theory of convex domains on the plane or space, and convex curves,[3] from the end of the 19th century and the beginning of the following century. Thus, from the end of the 19th century, the isoperimetric problem changed its scope: it now consists of determining, among all the closed plane curves of a given perimeter, the one that contains the greatest area. This same problem can still be followed in other fields of recent geometry, where the inequalities were found to serve in one way or another. This long and rich history illustrates the variety of styles encountered in the conceptualisation of the same problem.

[3] "Convex domain" on the plane or space is taken to mean a set of points such that given any points A and B, it contains the whole line segment AB that joins them. The boundary of a convex and bounded figure is a closed convex curve.

Conclusion

In conclusion, it seems that it is clear from the example of Menelaus, the founder of spherical geometry, that the multiplicity of styles is the effect of the gestation of a new style, which cannot exist without the old one. We have observed in this example that the Euclidean style, defined from the axiomatics of Euclid's *Elements* and the theory of proportions, was called upon to deal with a new object that does not admit a postulate essential to the definition of this style, and which even excludes the means of conceptualisation of Euclidean geometry. Menelaus had to combine the Euclidean style with another style, which can be described as a proto-intuitionist. This intersection between two styles is not uncommon in the founding works of new mathematical disciplines: it can be observed in the *Conics* of Apollonius, the *Optics* of Ptolemy, and other works.

As for the example of the isoperimetric problem, it seems that the multiplicity of styles is due to the transformation of the object of research, aroused by the ontological density of the circle and the sphere, whose properties are inexhaustible. The multiplication of styles that involve the languages of cosmology, the geometry of figures and solid convexes, infinitesimal geometry, differential, and integral calculation, metric geometry of convex domains, is the effect of the acquisition of other methods, forged in the event of new research in other fields, and which have allowed the unveiling of new layers in the thickness of the objects—the circle and the sphere. Beyond the plurality of styles and methods, the unifying element of this subject lies in the constant effort to determine the extremality properties of certain convex domains and develop a theory of these domains.

This long and rich history also illustrates what we already learned by the example of the *Sphaerica*: the multiplicity of styles is the hall of mathematical research that deals with dense and fruitful objects. One might dare to say that the uniqueness of the style is an indication of the lightness or even the poverty of the object.

Perhaps this is why Granger proposed this heuristic instrument to philosophers and historians of science, which allows us to marry this complex dialectics between uniqueness and multiplicity, which stirs many mathematics and science subjects.

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To the Origins of Discourse, or on the Birth of Society and Law

Abstract

I consider the beginning of society to be the integration of hostile Homo Sapiens communities into dual-group alliances, which ensured superiority over Neanderthals, made possible by the formation of legal discourse between the parties of a dual alliance who remained aliens to each other, which provided peace and stimulated a leap in linguistic and cognitive development, including the formation of the coercive power of logic.

Keywords

Law Genesis, Sociogenesis, Legal Discourse, Neanderthals, Homo Sapiens

Introduction: Modifying Lévi-Strauss, or The Triumph of "Molecular" *Homo Sapiens* Communities over "Atomic" Neanderthal groups

The proud meme "Homo Sapiens," invented by Linnaeus and firmly imprinted in the scientific and mass consciousness, is hardly adequate as the name of our biological species. For lack of another word, we will have to use this name. According to modern anthropologists, this species has existed for more than two hundred thousand years. The early groups of *Homo Sapiens* numbered hardly more than two or three dozen people like their contemporary *Neanderthals*, *Denisovans*, and other *Homo*; they were in a state of absolute enmity. Hobbes's speculative reconstruction of the war (Hobbes 1651) of all against all turned out to be close to reality. Today, parochial altruism is often used to denote relations between people in those ancient times. High

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intragroup cohesion and readiness for self-sacrifice emerged in the context of irreconcilable confrontation with the environment. Unlike, for example, ants or bees, in which rigid deterministic mechanisms support such phenomena, cohesion in humans is due to resilient intra-group empathy, which, especially in some circumstances, forms almost a common psyche, when the pain of another is felt as one's own, where interindividual boundaries are erased. The group almost turns into a single multi-headed creature.

According to Levi-Strauss's hypothesis, formulated in the middle of the last century, human society begins with the formation of intergroup alliances, the cause of which was the emergence of exogamy (*Levi-Strauss* 1983, 19*)*. Thirty years later, primatologists discovered exogamy in apes. Another quarter of a century later, paleoanthropologists showed that exogamy existed throughout the entire period of anthropological evolution, and, therefore, in terms of the mechanism of the emergence of intergroup alliances, Levi-Strauss was mistaken. However, as I will show later, the idea that just such alliances became the starting point of a qualitatively new type of being, which it makes sense to call society, is undoubtedly productive. At the same time, the crucial role in forming the first dual-group alliances[1] could be played by the rational-legal discourse forming between the communities of *Homo Sapiens* in the context of their tough opposition to the *Neanderthals*. The term Sapiens can be applied relatively adequately to the human world from this time.

According to modern anthropology, it seems mysterious that the hybridisation of *Sapiens* and *Neanderthals* occurred only during the first (Markov 2012, 324-325) unsuccessful[2] attempt by *Homo Sapiens* to leave Africa. However, while the exodus occupied Europe, no hybridisation occurred despite neighbouring *Neanderthals* for several millennia. Forty to fifty thousand years is insufficient for the emergence of a biological barrier to interbreeding. Such a period separated the failed attempt from the blitzkrieg for human evolution, though not a moment. However, the mystery can be explained by the formation of a cultural chasm, in the light of which, as the Russian evolutionist Markov put it, "former kin were now only good for lunch" (Markov 2012, 358).

[1] For a rationale as to why inter-group alliances should have remained dual rather than larger alliances involving more than two basic groups for quite some time, see (Shalyutin 2011, 17).

[2] As L. Vishnyatsky writes, "The first attempt to settle outside Africa was… unsuccessful. Apparently, about 70,000 years ago, the Neanderthals, who came to the Middle East from the north, displaced Homo sapiens from there" (Vishnyatsky 2010, 83).

When *Homo Sapiens* first came out of Africa, the *Neanderthals* who came down from the north drove them back a little later, which is not surprising, as *Neanderthals* were physically much more robust. What seems strange is that only a few tens of millennia later, the balance of power had changed dramatically, "...the indigenous Neanderthal population of Europe has fallen under the onslaught of Middle Eastern aliens much faster than [previously] thought" (Markov 2012, 357-358). The process took no more than 6,000 years (ibidem). "After that, the surviving Neanderthals survived in secluded corners of Europe (such as the Gibraltar Peninsula, the Balkans, and the Crimea)—until their eventual extinction" (ibidem).

Crucially, archaeology not only fails to confirm any decisive military-technical superiority of *Homo Sapiens* over *Neanderthals* at the time but, on the contrary, casts increasing doubt on the very existence of a significant superiority at all. Nevertheless, the organisation of *Homo Sapiens* into dual-group alliances, as I hope to further show in this article, may well explain both their decisive martial dominance, due to numerical advantage, and their rapid cultural break from their *Neanderthal* rivals.

E. Evans-Pritchard described how groups of Nuer who were at odds with each other united in the face of a common enemy (Evans-Pritchard 1985, 129). Such unification is a typical behavioural pattern characteristic of non-literate societies, the prerequisite for which is some common self-identification of the uniting groups against the background of opposition to others—strangers. Could ancient *Homo Sapiens*, who were moving out of Africa because of demographic pressure, create intergroup associations (Vishnyatsky 2000, 247) by pushing directly against *Neanderthals*? Would this be an alternative account to the empirically refuted Levi-Strauss hypothesis of exogamy?

In principle, our ancestors' capacity for such unification is undoubted, for anthropologically, they are practically identical to us. However, unlike the Nuer, they did not have ready-made unification mechanisms, and they still had to pave the way from "atomic" to "molecular" human groups.[3] The formation of these complex mechanisms took several millennia. However, it resulted in the emergence of stable dual-group alliances, the complete domination and "triumphal procession" of *Homo Sapiens*, and the displacement of *Neanderthals* and other human species from Europe and eventually other territories on Earth.

[3] By analogy with atomic and molecular propositions.

Formation of Law as a Decisive Factor in the Emergence of Society

There is no doubt that the main threat to the sustainability of the early dual unions was the enmity of their halves. Even today, where a dual organisation is found—and, according to Lévi-Strauss, it is common in the Americas, Asia, and Oceania—relations between such halves are expressed "both in close cooperation and latent enmity" (*Levi-Strauss 2001, 17*). In the period of interest to us now, the explosive tension that permeated the coexistence of the halves was most probably primarily due to that recent absolute hostility, which could not help but persist in the historical memory and collective consciousness of each side.

Constant communication between people of different halves, who disliked each other, to say the least, was bound to create a threat of quarrels in which each participant had the strong support of their home group, which maintained the old principle of internal relations: "one for all, all for one." This permanent explosive situation in its most initial stages of brinkmanship (and there is no doubt that such clashes occurred thousands and thousands of times during the alliance formation process) could only be "extinguished" by an institutionally organised conflict resolution mechanism. Its formation constituted the main content of the transition from the pre-social phase of human history to society. The starting point for such a mechanism would be some decisive factor capable of blocking a combat response and damage in the broadest sense of the word, from insult to murder, inflicted by any member of the opposing half.

In my view, there are good reasons to believe that such a factor was mutual hostage-taking. Today, hostage-taking is primarily associated with terrorists or bandits who take hostages to make demands to the authorities. A far more significant role in history has been played by situations where, on the contrary, it has been the authorities who have taken hostages in order to keep subdued peoples, groups, territories, etc., firmly in their obedience. However, "vertical" hostage-taking (bottom-up or top-down) is historically preceded by the large-scale institution of "horizontal" mutual hostage-taking, in which there is no power relationship between the parties and their forces are approximately equal (Hammer, Salvin 1944, 20). What is happening here is not a takeover but a voluntary exchange of hostages. According to Joel Allen, this type of hostage-taking acts more as a bridge linking sovereign countries than as evidence of blackmail (Allen 2006, 72). In former times, "no treaty, no major transaction, went without them [hostages - B.S.]" (Smir-

nov 1973, 553); "the exchange of hostages is an archetypal form [...] of the settlement of inter-tribal relations" (Il'in 1994, 118). Historically and logically, the first function of hostage-taking, one of the most important and ancient social institutions, was precisely the establishment of peace. It ranged from "conciliation," guaranteed by a short-term exchange of hostages immediately after hostilities, a "customary method of settling trouble between clans or tribes after a war" (Emmons 1993, 310), to securing long-term peaceful relations through dynastic marriages and exchanges of ambassadors.

The logical connection between exogamy and hostage-taking was recorded by W. Warner, on the basis of whose research H. Johnson writes: "Moreover, since the clans were exogamous, each had given hostages to some of the others, in the form of out-marrying women" (Johnson 2006, 187). The safety threat to the male victim half's women, daughters, and sisters —who had become wives to the men of the counteragent half—was (in my opinion, already at the dawn of society) a potent deterrent to such an attack. It prevented the event of an attack in retaliation for any harm inflicted. The reciprocity of the exogamous hostage meant enforcing peace.

In anthropology, it is common knowledge that every group is highly jealous of its status compared to other groups, reacting most decisively to any attempts to belittle it from someone else. In dual social organisms, the equality of the parties is a fundamental systemic principle. The damage caused by the actions of the opposing half constitutes an imbalance. The impossibility of a retaliatory attack against the offending half does not mean that the injured party humbly accepts what has happened. Conflict can only be resolved by restoring balance.

In modern non-literate societies, the forms of restoration of equilibrium are incredibly varied. Undoubtedly, they were so at the dawn of humanity too, and we can hardly ever reconstruct them. Nevertheless, there are logically necessary moments without which the restoration of equilibrium is impossible. These establish the damage, the perpetrators and decide how the balance should be restored. The procedure that establishes the fact of the damage (or the event of the crime), the culprit, the amount and form of compensation, etc., is a judicial procedure in modern language. Thus, the emergence of the primary form of human society, the dual-group community, was only possible by forming a judicial procedure for conflict resolution.

The judicial conflict resolution procedure is a crucial element, but only an element, within a system, without which the procedure cannot exist. It assumes the existence of rules. The minimum is the rule of the court itself, i.e.,

compulsory recourse to the judicial procedure; in case of conflict between parties and the judicial process's organisational rules, this procedure substituted for an aggressive attack. In addition, the primary judicial procedure also had a mandatory contractual component: the absence of coercive institutions to coerce the guilty party meant that, at the end of the trial, the parties not only agreed on the decision itself but also agreed to enforce it.

Thus, we find that a fundamentally new mechanism for regulating people's behaviour emerges in the relations between the parties of the dual-group community, which comprises a single complex of genetically and functionally interrelated moments: contract, normativity, court, and coercion. There is only one term for this mechanism in the social knowledge system: law. Wherever there is a law, these components are present. Moreover, the development of legal regulation has probably not added anything typologically new to them. Of course, the circle and types of subjects of legal relations have expanded, the content of rules has changed, and specialised structures have emerged that undertake the functions immanent to legal regulation: parliament, courts, police, etc. However, all those systemic elements of law, which in their totality constitute it, were formed in inseparable connection with each other as an attributive aspect of sociality in its historically first form, the dual-group community. *Ubi societas, ibi jus est*. It should be emphasised that the dual-group community could not form without the legal mechanism of the relationship between the halves; it would disintegrate before it could have taken shape. All this allows me to conclude that the formation of law is not simply a side of the process of constituting society but a decisive factor in it.[4]

The Formation of Law as a Driver of Cognitive Progress

The most important aspect of the formation and deployment of legal regulation, a consequence and factor in this process at the same time, I believe, was the enormous linguistic and cognitive progress, which seems to be a vital component of the leap that formed the cultural gap between *Homo Sapiens* and *Neanderthals* and made possible the form of human communication that today is known as discourse.

The phenomenon of conflict resolution has already been documented in great apes. However, the trial is separated from the conflict in time in a judicial procedure. This separation means that, first and foremost, the conflict

[4] The interpretation of law proposed here, which starts from its constitutive role in the formation of society, can be designated as the societal concept of law.

situation itself needs to be reproduced in sufficient detail, which requires the formation of cultural mechanisms that make it possible to reconstruct and represent the event that once occurred.

The participants in the litigation create a kind of reality that is alternative to the physically existing one. In describing contemporary mechanisms for dealing with conflict in non-literate cultures, social anthropology makes it clear that initially, such reconstructions made extensive use of physical demonstrations. Over time they have been reduced, replaced by linguistic means. This replacement required the expansion of the vocabulary and the development of other means of exercising the descriptive function of language: that essential function by which we can talk about what is not here and now, allowing us, through language, to create worlds that do not physically exist, including never having existed and could never have existed. Language begins to transform itself into a grandiose demiurge, the creator of an invisible culture but the primary and authentic content of the everyday life of people in society.

As you know, two different people perceive, interpret, and reproduce the same situation differently, even if they are sincere. Understandably, it is difficult to assume such absolute honesty from the parties to a conflict. Primatologists have established that even great apes have mastered the tools of concealment and lying. It would be strange to think that *Homo Sapiens* did not use this toolkit when dealing with inter-group conflicts. In doing so, verbal language offers enormous and fundamentally new possibilities for lying compared to non-verbal means of communication.

Conversations between intimates and between aliens are entirely different conversations. Intimates often understand each other with little or no words. Aliens do not and do not want to feel subtexts, do not know and do not want to know contexts, not only lack empathic interpenetration, but are instead mutually hostile, have no presumption of the trust attributable to their communication, and often, on the contrary, come from a presumption of distrust. Communication that ensures the understanding of aliens is incomparably more complex than that which ensures the understanding of intimates. A conversation between aliens should be expanded and detailed, containing the most reliable safeguards against undesirable interpretations, etc. At the same time, the language of the dialogue of the opposing subjects should also contain possibilities for evaluating the statements of the opposing side in terms of their veracity/falsity, accuracy/inaccuracy, etc. This evaluation means that the subject of the conversation is not only the events themselves but also the judgments about these events, assessments, and

evaluations of evaluations. Language, and the thought it expresses, become hierarchically organised systems relating to physical reality by complex and mediated links.

The ancient judicial reconstruction of an event could only be realised by forming a whole complex. It includes the linguistic and other cultural, above all cognitive, innovations—transferring an event from the past to the present means extracting it from the actual flow of events, abstracting it from the mass of circumstances and actual relationships, creating a particular picture of events as an ideal object constructed through human consciousness. Thus, the focus is not on a natural or manufactured physical object but on an ideal object that exists only virtually, which in itself is a radical innovation, but also generates a whole set of related radical innovations. The ideal construct, removed from the actual flow of events, appears abstracted, among other things, from the system of temporal relations and is out of time. As a result, the very temporal structuring of the world changes fundamentally. An episode of the past that has lost its temporal shackles moves freely into the present, where it coexists with the "present present" and has an impact on it, a causal role. The past no longer passes away, does not fade into oblivion, but is integrated into the present; in other words, the present begins to absorb the past. The (re)construction and reflection of past events form the matrix of the presence of the past in the present. This matrix is the condition for the emergence of historical memory, of course, mythologised, unique to each community, and transformed into its cultural-identificational code.

The essential point is that a collective cognitive activity occurs within the judicial process. The subject of cognition—and litigation is essentially (though not exclusively) a judicial inquiry, i.e., cognition—is not the individual but all participants in the process. An actual, supra-individual cognitive subject is formed. Opposing parties must represent the cognitive process unfolding in court proceedings. This representation means that every statement comes under the fire of criticism and assesses its consistency with reality. Thus, not only a situation that has taken place becomes the subject of discussion, but also a judgment about this situation, which means that logical-linguistic reflection begins to form and language itself becomes the focus of attention, which of course is radically different from the usual statements about physical reality.

The work of public consciousness in a trial is not limited to the cognitive component. Having established (accepted as established) certain events, the court must evaluate them. Accordingly, value and value-normative reflection are formed: what is good and evil, acceptable and unacceptable, etc.

Moreover, over time, inevitably, qualitative assessments begin to require quantitative specification: how wrong, how unacceptable. Quantitative certainty is a prerequisite for the proportionality of punishment. Thus, from the axiological point of view, one way or another value correlates the most different aspects of human behaviour and the functioning of society. The judicial process turns out to be the procedure during and as a consequence of which social norms, values, and ideas are explicated, verbalised and crystallised.

Another—and in some respects, the most important, decisive—moment of the constitution of discourse in the process of the genesis of law was the formation of the coercive power of logic, which I will discuss in more detail later.

On the Essential Specificity of Subject-Subject Communication in Legal Discourse

The sublime conception of natural law would be remarkable if not for its fundamental fallacy. Law is a discourse, a special kind of subject-subject interaction; there is no discourse in nature. The entangled births of law, discourse, and society mean the formation of specific subjects of this interaction and thus of the interaction itself.

There was no subject-subject relationship until a particular stage in the evolution of the animal world. The primary cognitive images, which appeared with the emergence of the psyche, were images of obstacles to physical movement.[5] For a long time, animals "knew" the surrounding reality as exclusively passive because they did not have the cognitive tools to represent external active agents in their psyche.

A singling out must originally have been associated with the emergence of a new type of relationship in nature: predator-prey. In evolution, the ability was formed to distinguish subjects from this object environment—beings capable of generating their activity. The behaviour of the predator and prey relative to each other has become fundamentally more competent and effective in the formation of a new type of cognitive unit in their psyche. Namely, units representing the counterparty as a subject whose activity is not wholly predetermined and in its final certainty is built independently. In highly developed animals, such as mammals or birds, the relationship between predator and prey, the competition between predators over prey, and many other relationships between individuals belonging to different species and

[5] For more information, see (Shalyutin 2002, 35-48).

communities, undoubtedly have a subject-subject character. Each understands that the other chooses behaviour, that is, acts as a subject, that they can be tried, for example, to deceive, outwit, etc.

Later on, another aspect of subject-subject relations based on empathy is added to the purely cognitive separation of subjects from the object world. This separation was mentioned above in the case of humans, but empathy emerges at much earlier stages of evolution and is inherent in at least all warm-blooded species. However, recognising the other as a legal subject (counterpart) differs fundamentally from the cognitive fixation of it as a subject and the empathic subject-subject relationship (which includes the cognitive component as a prerequisite).

The mere cognitive fixation of the other as a subject does not change the pattern of behaviour that contains no limitations beyond the limits of realistic possibilities in objective circumstances. The other subject here is just a special kind of objective reality. The attitude towards them is no different from that towards non-subject environmental elements—mountains, bodies of water, trees, etc. If another subject prevents the first from getting something they want, and the first is physically superior to the second, they will eliminate them (chase them away or kill them), as they would, for example, eliminate an obstructing stone.

The human atomic group, in terms of its relationship to its environment, is not fundamentally different from any living being for whom the environment is, firstly, a source of sustenance, obtained by all available means, and secondly, a source of threats, which it avoids, also using the whole arsenal of means provided by nature.

Adding to the cognitive recognition of the other as a subject of empathy towards them changes things radically. The subject cannot inflict death or pain on the person they empathise with because empathy means inflicting pain on someone else; they are inflicting pain on themselves.[6] Empathy means a kind of co-subjectivity. The empathetic subjects are not opposing each other; the emotional interpenetration turns them into a single subject in a sense. Empathy is a kind of natural, physical barrier to harming another being in any way. However, unlike the individuals within each, the parties to the primary intergroup alliances are generally not empathetically linked. They are aliens to one another.

[6] Excluding a special kind of situations where, for example, a painful action saves from worse consequences, i.e., it is the lesser evil.

A fundamentally new aspect that constitutes a qualitatively different type of an inter-subjective relationship in comparison to previous ones is the rational recognition of the pretensions of the other subject, the agreement with these pretensions, which thus means the renunciation of one's previous pretensions to everything. The unlimited pretensions of each group, claims to everything inevitably give rise to an inter-group war of all against all. The reconciliation of pretensions instead of everyone's claim to everything means the emergence of a fundamentally different mode of existence, a new ontology! The discovery of a clash of pretensions and wills no longer generates a physical clash of the parties, i.e., a war, but a dialogue that results in an agreed self-limitation and mutual limitation of wills, i.e., a treaty that creates a rule. War, violence is replaced by rational interaction. The ontology of dialogue replaces the ontology of war.

Recognising the opposing group as the subject of the pretensions means renouncing war, renouncing recourse to force. Law is an alternative to violence, an alternative to war. The fundamental truth once formulated by Cicero is widely known: *Inter arma leges silent* (when weapons speak, laws are silent). If you wrap this saying around it, a new one proves just as true: when laws are spoken, guns are silent. Law and violence are antonyms. The rejection of violence against a counterpart is part of the constitutional basis of the law.[7] Resorting to violence is a rejection of the law.

The construction of legal discourse is highly complex, so much so that at present, it is difficult to imagine the process of its formation, the stages, the logic, and mechanisms of transition from one to the other. It seems possible now only to highlight its invariant constitutive characteristics, without the complete set of which the sustainable replacement of the logic of force by the force of logic would be impossible.

First of all, it should be recorded that the inter-group connection in which legal discourse is formed does not arise through conquest or any other kind of coercion, but as a free alliance, and, accordingly, recognition of the counterpart's pretensions and thereby relinquishment of part of their pretensions is done by free subjects. Mutual recognition by the counterparties of each other's freedom, a refusal to try to influence the counterparty's will in

[7] I would point out that legal non-violence, strange as it may seem at first glance, is more reliable than empathic non-violence. A loving mother may smack a child who is reaching for a socket to keep them out of danger. An empathic relationship does not necessarily equalize people and, for example, the elder may use force against the younger person in their interests (at least as they understand them), without considering their own will to be mature enough and ready for freedom. In a legal relationship influencing the will of the counterpart is only possible through rational argumentation.

any way other than by presenting arguments on which the counterparty decides for itself, that is, freely—the starting point of legal discourse. Law and legal discourse only exist where free actors operate.

Since the parties forming the dual structure are free, it is understandable that neither party would accept a worse position compared to the counterparty in anything. This comparison means that all restrictions and self-restriction arising in the formation of this structure can only be symmetrical, mirror-like: we recognise your pretensions exactly as much as you recognise ours, we restrict our pretensions exactly as much as you do, and so on. The most important corollary to this is the equality of the parties as counterparts in rational discourse. Let us look at what the most significant points of this equality are.

Let us start with the point about the argumentation. Equality of the parties as subjects of argumentation means, firstly, that each party has the opportunity to argue its position in the event of a conflict fully. While other points are important, this one should be highlighted. Only an equal opportunity for the counterparties to present a complete argument can ensure peace: since the aspiration to assert oneself, one's interests is immanent to each side, a restriction on either side's ability to argue means that it can only assert itself by force. Ensuring procedural equality in argumentation is, in fact, the basic principle, the very essence of procedural law, be it criminal, civil, arbitration, or any other process. Specific rules of procedural law may vary, but they must be aimed precisely at ensuring the implementation of this principle; otherwise, the law will fail in its mission to replace the logic of force with the force of logic, provoking violence. The process is only legal to the extent that it implements this principle, deviation from which transforms the process into a political or another non-legal one. Secondly, this equality means that the strength of an argument does not depend on which side has made it but only on its intrinsic content. Here it is hard not to see similarities with the well-known principle of universalism formulated by R. Merton in his description of the ethos of science, which assumes both that people have equal rights to engage in science regardless of their social, cultural, or anthropological characteristics, and that the veracity of statements is not dependent on who makes them.

The next aspect of equality of counterparts is equality in the discourse's immanent obligations of the parties. First of all, this means that each party is under an obligation to listen to the counterparty's arguments and has no right to refuse to do so. The obligation to respond logically to the counterpart's arguments, the poles of which are agreement and refutation, is based on compulsory perception.

Equality of the parties also includes an evaluative moment, namely the parties' assessment of each other, in which cognitive and behavioural components are essential. Cognitive assumes that each party relies on the other's ability to perceive, to understand its logic. Argumentation is not simply a process of self-deploying some logical chain. I am not just arguing a specific thesis for certain reasons. Fundamentally, I argue with a particular person. My task is to convince the counterparty, to make them agree with me. It is not just the other, but an opposing, antithetical subject whose approach and stance are the opposite of my own. The hope of succeeding in persuasion is only possible whenever mutual intellectual respect between the parties exists. Rational discourse is only possible with someone to whom the logic of the argument is accessible. Appealing to the counterpart as a logical subject means recognising them as such a subject.

Regarding the behavioural assessment, the parties must proceed on a presumption. The argumentation will determine the counterparty's behaviour if they agree with the argumentation. Let me remind you that there were no unique coercive power structures in dual societies. The parties themselves were equal in power and therefore had to have a developed mechanism for self-coercion and assume it in the counterpart.

In addition to the freedom and equality of the subjects of legal discourse, its fundamental condition is that the parties recognise as axiomatic the existence of a coercive logic, the existence of logical constructs with which there can be no disagreement, which has an absolute coercive force. Each side assumes such a logic, which constitutes the premise, the invisible but unshakable foundation of discourse because, without such a foundation, there is no way to get the counterpart to agree to a position that contradicts its existential attitudes. In the earliest courts, decisions were sometimes made to take a person's life. For one party to agree to the death penalty of someone of their intimates, it must proceed from an unquestioning acceptance of the idea of some absolute logic. This logic thus acquired a status not simply cognitive but existential, ontological, stronger than the systemic emotional bond that constitutes the integrity of each of the halves. The presence of this logical power overpowering empathy is evidence of the formation of a qualitatively new level of being, the principles of which, when confronted with the principles of the previous level, win out. Legal onto-logic turns out to be the basis of social ontology.

The mechanism for the emergence of logical coercion remains to be explored. However, we can not just assume but confidently state that the formation of the logic of the Due preceded the formation of the logic of the

Things Existent.[8] Legal discourse includes as its main components a discourse about actual behaviour in terms of its compliance with the rules and discourse about the rules themselves, i.e., the invisible laws. The invisible becomes the focus of collective reflection, which is, among other things, a prerequisite for scientific discourse. The relationship between rules and behaviour is very similar to that of the theoretical and the empirical in science: the laws of nature, verbally expressed in the laws of science, are a system of dispositions prescribed (according to some, by God) to nature; in other words, the scientific picture of nature is constructed by analogy with the law.

The further evolution of legal discourse involves modifications, including substantial ones. The most important and partly interrelated (although the nature of this interrelation is complex and cannot be dealt with here) of these are the emergence, alongside the supra-individual, of individual subjects of discourse, in certain circumstances an unlimited and a vast number of participants, and the emergence from the system of legal interactions of specialised separate bodies for justice, rule-making, and enforcement, with an additional important point being the partial or complete fusion of these structures with the institution of the state. These modifications meant that the characteristics previously intrinsic to each subject of legal discourse could now be partially shared between them. For example, the existence of specialised institutions of social coercion removes both the requirement for each party to have a developed capacity for self-coercion and internal agreement with the decision. At the same time, the presence of a judge means that one party now does not necessarily have to understand the reasoning that the other presents. A detailed description of these transformations requires separate consideration.

Conclusion

Since, as we have seen, the emergence of law, legal discourse is historically the emergence of discourse in general, *Homo Juridicus* is the formation of *Homo Sapiens*. By becoming *Homo Sapiens*, people have created new spheres of discourse by acquiring the capacity to act as a subject of discourse. Thus, moral discourse seems to follow immediately after legal discourse, almost hand in hand with it, while, for example, antiquity marks the birth of world-

[8] Interesting in this sense are Heraclitus' Logos and Plato's ideas, in which the Due and the Things Existent are syncretic.

view (philosophical), political and proto-scientific, partly even scientific, discourse. However, since discourse is historically established precisely through the law, its socio-ontological status is also established here. The logical reality of legal discourse becomes ontologically prioritised over physical reality, determines people's physical behaviour, and wins out when it collides with other determinants of behaviour. Of course, this does not mean that every discourse can play a decisive role in determining behaviour (this is hardly possible for, for example, art or culinary discourse), but this is the fundamental capacity of discourse. Behind the visible physical, social reality lies the invisible one, the essence of a socio-cultural being. Within this invisible reality, which cannot be reduced to discourse and includes many other things, discourse occupies a crucial place and sometimes determines social order and social movement.

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A Novel Tool for the Study of Social Media Narratives

Abstract

The study of social media discourses requires alternative methods to traditional narratology. We propose a tool that can be used in this promising area of research. We explain blending in metaphor and mathematical communication, showing how the latter can be extended to social media. The underlying idea is that style describes how the parts of a narrative are blended into the whole.

Keywords

Social Media Narratives, Style, Discourse Analysis, Conceptual Blending, Metaphor

Introduction

The future of freedom of speech is entwined with social media. The digital flow of information has radically changed how we communicate, for better and worse. Social media platforms allow their users to construct and promote narratives that may or may not serve the truth. Usually, these narratives are interactive, meaning that other users can add replies, comments, "likes," upvotes, and other responses. The study of such narratives requires new methods not provided by traditional narratology. We introduce a tool that can be used in this promising area of research.

This paper is the first in a series of works serving as an introduction to our research project. In future papers, we shall present and evaluate techniques for studying narratives in social media, paying particular attention to

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how they deal with social issues. These techniques will include protocol analysis, conversation analysis, interaction analysis, and the (already widely used) discourse analysis.

Why is a New Theory Needed?

Technological progress has raised new issues, such as sharing and narrative representation across media. Unfortunately, most studies of social media narratives still follow traditional approaches which cannot handle these. This approach happens because they were developed mainly to analyse verbal structures and content, based mainly on discourse analysis.

We shall suggest a tool that can be used towards a theoretical framework for studying narratives within interactive media in general and social networks in particular.

An effective way to study such narratives would have significant implications for communication strategies because it would help make users more aware of fake information—by, for example, providing better tools for reputation management.

Particular emphasis needs to be given to the discourse styles in social media narratives. Our point of departure will be the paper "Style as a Choice of Blending Principles" by Goguen and Harrell (2004).

More specifically, we claim that the narratology of social media would benefit by using ideas from (Stefaneas and Vandoulakis 2012, 2013, 2014). These works study how mathematicians collaborate to prove theorems using the web. Such collaboration has close similarities with social media narratives so that these studies can provide valuable insights.

Planning and the Administrator

The administrator is a key difference between social media narratives and other kinds of narratives. Twitter, for example, has administrators who can suspend or ban users' accounts, as do Wordpress.com and other blogging platforms. In addition, users often act as lower-level administrators: blocking unwanted replies to tweets or deciding not to publish comments about their blog posts.

The existence of an administrator leads to the idea that there is underlying planning implemented via the administrator, according to the Terms of Service of each platform. This idea means that planning in social media narratives should be studied extensively and integrated into any new theory.

As it happens, the structure of planning discourse has already been studied in linguistics by Goguen and Linde (Linde 1986, Goguen and Linde 1983). However, to our knowledge, it has not been studied in the context of social media. This lack is unfortunate because planning is crucial if we want to develop an improved way to evaluate online narratives. In particular, the study of planning will help us collect data about social media use. Social media is so vast that human evaluation of narratives is time-consuming at best and impossible at worst. If we can computerise such evaluation, it will provide faster, better, and more rigorous data collection.

Computational Narratology

Our starting point is this passage from "Style as a Choice of Blending Principles" (Goguen and Harrell 2004, §3):

> A significant finding is that the optimality principles posed in (Fauconnier & Turner 2002) do not work for generating some poetic metaphors. As a result, we suggest a much broader view of blending principles in Section 3.5, under which different works may be controlled by different principles; for example, the choice of domains for themes, imagery, local knowledge, etc. is considered a blending principle, because these domains contribute to both the conceptual and structural blends that constitute the work. We then explore the idea that style may be determined by such principles.

At this stage, the passage will mean very little to most readers. However, the core idea is that the style of a text—in the broadest sense, including blog posts, Twitter threads, and so on—is, in effect, a set of parameters that determine how the parts of the text are blended. It is this that we want to apply to social media.

By "blending," we mean something akin to the way that the meanings of the words "house" and "boat" get blended to derive the meaning of "houseboat." Indeed, according to Goguen, blending such concepts to make new concepts is an essential cognitive operation. Metaphor is one case of its use.

However, it has broader uses. Such uses lead to the idea of style as a set of parameters that determine how the parts of the text are blended. We shall trace the ideas that led to this notion and then explain how it defines the style.

We shall also show how Stefaneas and Vandoulakis applied this to collaboration between mathematicians, particularly mathematicians proving theorems and collaborating via the web.

We show too that there are close similarities between this mathematical collaboration and social media.

Finally, we suggest that because of these similarities, methods from the study of such collaboration—in particular, the idea of style as a type of blending —can also be used in studying social media, especially in classifying and explaining the way that many different kinds of narrative can emerge from the same series of events.

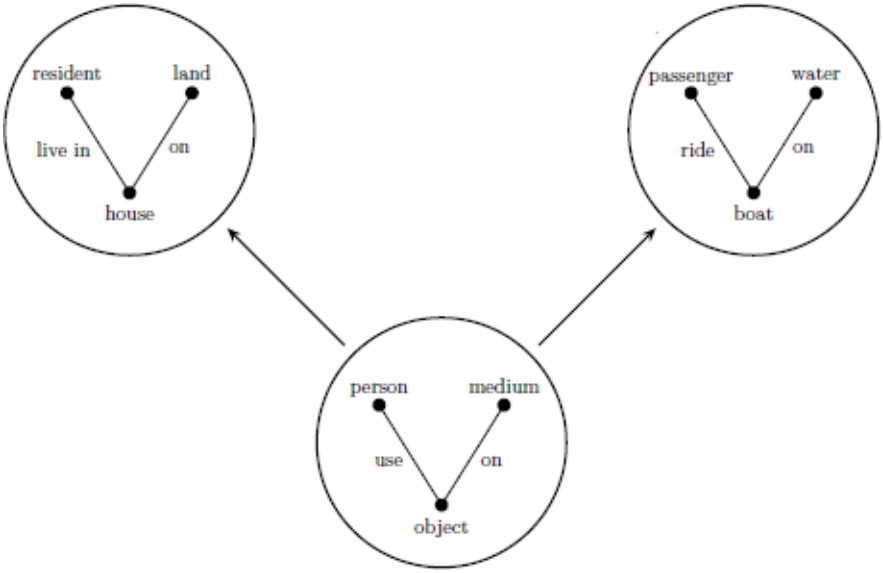
To summarise, the progression of ideas in the paper is:

1. A metaphor is a blend between two conceptual domains. How its meaning is derived by blending.
2. There can be many possible blends, i.e., interpretations of a metaphor. We need principles for choosing the best—"optimal"—blends.
3. A digression into the intellectual contributions to blending theory and suggestions for further reading.
4. How the optimality principles work.
5. Different optimality principles may be needed for unconventional blends in poetry and social media.
6. Similarities between web-based mathematical communication and social media.
7. Style as a choice of blending principles.
8. Application to mathematical communication.
9. Application to social media.

How Blending Explains a Metaphor

Let us look first, therefore, at how blending explains metaphor. We shall use Goguen's classic "houseboat" example (Goguen and Harrell 2004, §2.3). The point of the example is to show how the word "houseboat" gets its meaning from the meanings of "house" and "boat."

Consider the diagram below:



Each circle represents a "conceptual space" in this diagram: a small network of concepts built temporarily by the mind as it tries to understand an utterance. The nodes (dots) in the networks denote entities, and the edges (lines between them) denote assertions that certain relations hold between them.

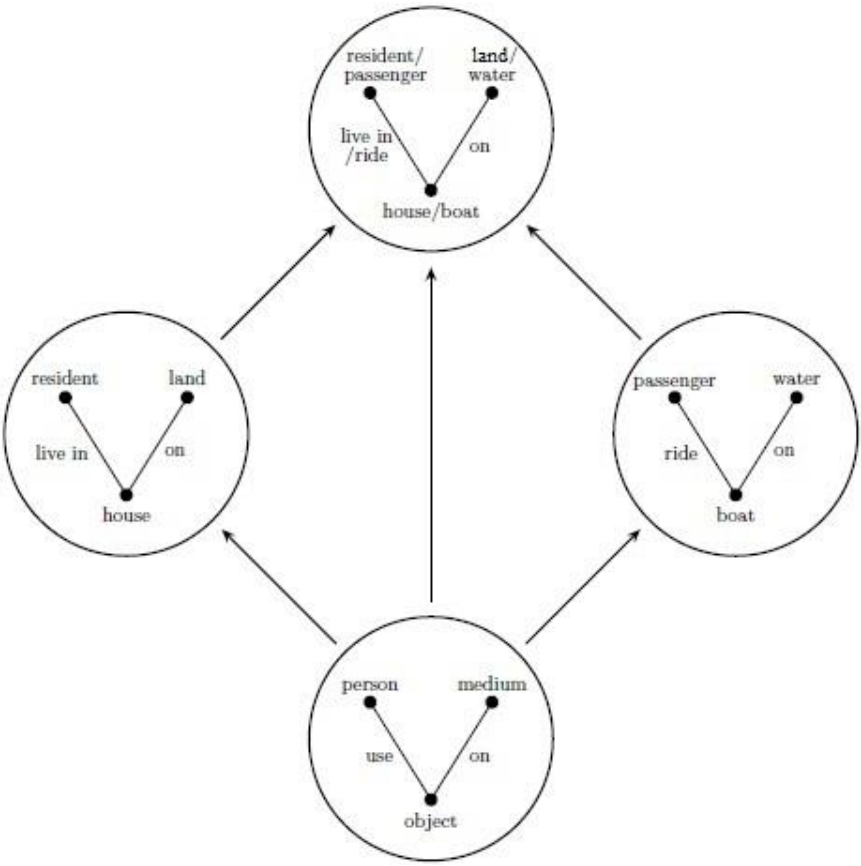
For example, the left-hand line in the left-hand circle represents the entities "resident" and "house" and the assertion that "residents live in houses." Similarly, the right-hand line in the same circle represents "house" and "land" and the assertion that "houses stand on land." The left-hand line in the right-hand circle represents the assertion that "passengers ride on boats." Of course, these simple diagrams do not capture the full subtlety of the words' meanings: no formalisation ever can. However, we do not claim that they do; we are merely using them to model what we consider essential aspects of metaphor.

The two top circles are *inputs* to the process of understanding. One is a conceptual space describing houses as in the previous paragraph, and the other is a conceptual space describing boats.

The bottom circle is an *intermediate stage*. It is a "generic space" built from the inputs and specifies what they have in common. Thus, consider the left-hand lines in the top circles. They represent the relations "residents live in houses" and "passengers ride on boats"; what these have in common is that "people use objects."

"People use objects" may not seem to say very much. However, boats and houses are far apart, semantically speaking. So are passengers and residents, and the relations "ride" and "live in." So, they have little in common, and "people use objects" is the best we can do. However, the generic space is not particularly interesting anyway. What interests us is the *output* from this process, the blend space. We shall explain this now.

To do this, we add a fourth circle:



We then map each entity and relation in the generic space to the corresponding item in the left-hand circle and then to the blend space; we also map to the corresponding item in the right-hand circle, and then to the blend space. This mapping gives us the pairings that are shown in the top circle: "house/boat," "live in/ride," "resident/passenger," "on/on," and "land/water."

The blended space now *almost* gives us the meaning of "houseboat," an object that is both a boat and a house, with a person who is both a resident and a passenger. One problem is that the blend says it is on both land and water. In fact, of course, houseboats work only on water, which is why we blued out "land" in the top circle. We deal with this problem below.

Blending is Partial

As Goguen and Harrell (2004) point out, this is not the only possible blend. They list others in their §2.3. These include a second blend that means "boathouse," where the boat "lives" in the house. Interestingly, this is an example of the literary technique of personification, whereby an object is considered a person. We shall return to this later when we discuss typecasting.

A third possible blend is similar in structure but has the house riding in the boat rather than the boat living in the house. Goguen and Harrell add real examples of this, as when a boat is used to carry prefabricated houses to an island.

However, a fourth is an amphibious recreational vehicle that can travel over both land and water and that one can live in.

A fifth blend has an even less familiar meaning: a livable boat carrying livable boats.

Finally, a sixth blend gives a boat used on land for a house.

All six blends have in common: they only partly blend the two input spaces. The blend that we discussed with our diagrams, meaning "houseboat," throws away the attempted pairing of "land" with "water." The second blend, meaning "boathouse," described in some detail by Goguen and Harrell, throws away several mappings, as they explain. Working through the others will show that they discard mappings too.

This demonstration implies that we need principles for choosing the best blends. Some blends will be too weak; the ultimate case does not pair any items between the two input spaces. At the other extreme, blends that pair up too many items can lead to impossibilities, as a "houseboat" would have done if it had paired "land" with "water." We need blends that sit in-between "optimal" blends.

Intellectual Contributions to Blending Theory

Before discussing how to choose optimal blends, we should indicate the intellectual history and makeup of blending theory. One strand in its development is a branch of mathematics called category theory. This develop-

ment manifests itself in the diagrams above because they are a particular case of a category-theoretic construction called "colimit." Goguen, inspired by category theory and general systems theory, showed a general mathematical tool for assembling systems from their components. In this case, the systems are conceptual spaces.

Category theory also inspired "algebraic semiotics," which we refer to in the next section. This theory deepens the treatment above by mathematising the notion of semiotic sign systems and mappings between them. The details are too mathematical for this paper but are discussed in (Goguen and Harrell 2004). An excellent and relatively non-mathematical summary has been written by (Joncas 2020).

Goguen has carried the formalisation of information integration even further (Goguen 2004), basing it on the theory of institutions (Goguen and Burstall 1992), an abstract theory about logical systems that originated from work on specifying computer programs. His approach unifies and generalises several other approaches to information, including Barwise and Seligman's information flow, Wille's formal, conceptual analysis, Sowa's lattices of theories, and Gärdenfors' conceptual spaces.

Finally, we should mention Gilles Fauconnier and Mark Turner. Their papers, several of which we cite in the bibliography, are easy to read and do not require mathematics. Goguen's ideas on blending are in part an experiment in formalising Fauconnier and Turner's conceptual blending theory. This aimed to explain the metaphor, analogy, and non-compositionality of adjective meanings, amongst other literary and linguistic phenomena.

Finding Optimal Blends

Let us now return to finding optimal blends. We said that we need principles for doing so. Goguen and Harrell suggest a few and demonstrate them (Goguen and Harrell 2005, §2.8). One is "commutativity." In a diamond diagram such as that above, a mapping from the generic space to the blend space has two parts: its left-hand path and its right-hand path. It is commutative if both paths map the entity or relation in the generic space to the same entity in the blend space. The more commutative mappings a blend has, the better it is. Informally, this is because it uses more of the information provided.

Another principle involves "typecasting": mapping one entity or relation to another that is incompatible. Mapping a boat to a vehicle is fine because one is a special case of the other. However, mapping a boat to a person involves typecasting because a boat is not and cannot be a person. The "boat-

house" blend from the last section, but one does this: as we mentioned there, it personifies the boat in order that it can "live" in the boathouse. The more typecast mappings a blend has, the worse it is. Informally, this is because it forces together incompatible kinds of meaning, thereby misusing more of the information provided.

Optimality in Poetry and Social Media

Goguen and Harrell (2004) describe how they extended blending to poetry, writing a system that generated poetic narratives. This system led to their view of style as blending principles, to which we return below. However, it also showed that optimality principles such as those above are not always suitable. Thus, in §3.4, they quote "Walking Around," a poem by Pablo Neruda on the weariness induced by consumerism. Amongst other metaphors, this contains the phrase "water of beginning and ashes," which combines entities of a very different type. Neruda's phrase "swan of felt" is less drastic but still requires typecasting. Goguen and Harrell suggest that such examples show that typecasting should sometimes be valued positively rather than negatively.

We believe this will be important in applying blending to social media. Some blends will be primarily factual, as when a health expert analogises the spread of COVID-19 through the air by analogy with cigarette smoke or perfume. However, some will be creative, artistic, poetic, aiming to surprise their unexpectedness. These will require different blending principles.

Similarities between Web-Based Collaborative Mathematics and Social Media

In the beginning, we quoted an excerpt from (Goguen and Harrell 2004, §3). The significant part was this (our italics):

> [...] the choice of domains for themes, imagery, local knowledge, etc., is considered a blending principle, because these domains contribute to both the conceptual and structural blends that constitute the work. *We then explore the idea that style may be determined by such principles.*

In other words, style is a set of parameters defining what is blended with what. Different choices of parameters give different styles. We claim that the narratology of social media would benefit by using these ideas as further developed by (Stefaneas and Vandoulakis 2012, 2013, 2014). Stefaneas and

Vandoulakis study how mathematicians collaborate to prove theorems using the web. So, we shall now show how such collaboration is similar to social media.

Imagine a social media platform called Prover: like Twitter, but where tweets—"preets"—can be any length and carry mathematical symbols. A group of mathematicians is collaborating over it to prove a tricky theorem about (say) how rapidly the area of polygons grows as you increase the number of edges. Each lives somewhere different, so they can only communicate via a Prover.

Our mathematicians all have excellent visual imaginations, so supplement their preets with graphs, sketches of geometric shapes, and so on. When someone preets an image, a collaborator will often open it in a drawing program, draw on it, and send back the result. Collaboration becomes a dance of electronic Post-it® notes.

Style as a Choice of Blending Principles

Now let us return to (Stefaneas and Vandoulakis 2014). They define a mathematician's style, in effect, as a *meta-code*. The style determines the individual mode of integration (selection, combination, blending) of concepts into the narrative structure of a proof. In other words, it controls blending: it is a particular choice of blending principles.

So, styles act as tunable parameters. To help our intuitions, we can visualise them as knobs on a radio. Each knob controls *what* gets blended, *how much* of it gets blended, and *whether* it gets blended at all. The knobs control in which way. The communicator, we shall assume, wants their communication, and hence the way it blends its components, to be optimal somehow.

Application to Mathematical Communication

For example, consider Stefaneas and Vandoulakis' comparison between mathematicians Michael Spivak and Aleksandr Kurosh on the one hand and the Bourbakists (Barany 2021) on the other hand. The Bourbakists are notoriously formal; they have eschewed images, whereas Spivak uses images plentifully to help their readers' intuitions.

Moreover, Spivak and Kurosh use narratives from the history of mathematics to optimise an efficient transfer of knowledge, whereas the Bourbakists optimise for purity. By purity, we mean that images are abandoned

because they may convey unintended intuitions and not convey the correct intuition to every reader. Therefore, to minimise contamination with unintended information, the Bourbakists avoid them.

For example, at a different level, we could analyse Spivak's images themselves. Which visual concepts do they blend with which mathematical ones to "pump" intuition from the latter, via the former, to the reader's mind?

Application to Social Media

How might these ideas transpose from collaborative proving to social media? In our view, the style of a social media narrative can also be defined as a *meta-code.* As with mathematical communication, the style determines the integration mode (selection, combination, blending) of concepts into a narrative.

We shall take Twitter as an example. Some users accompany the text in their tweets with images: in current internet culture, these are often "memes" (Kariko and Anasih 2019): pictures, usually found rather than made by the user, bearing short ironic or humorous captions. Other users eschew memes, and some may think them frivolous; some may not know how to find them. At any rate, one stylistic parameter is whether memes are present or absent.

A different kind of blend, but at the same level, is what we might call blending with links. Reputable users will, we hope, provide sources for facts that they cite. This citation can often be done by pasting in a link and is particularly important when facts are controversial or have life-or-death consequences. Topical examples include information about how COVID-19 is transmitted, its severity, the effectiveness of masks, and vaccination safety. So this determines another stylistic parameter.

At a lower, more detailed level, we can ask which kinds of images those who accompany their tweets with images get used. Few users accompany their tweets with images they have drawn themselves, and many use memes. However, are there different kinds of memes? We can look at how the caption on a meme can blend with the picture, using the same methods we use to analyse how mathematical images blend the visual with the mathematical. Moreover, are there different ways that memes can blend with the text in a tweet? We can look at that too.

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Cross-Cultural Communication and Linguistic Cross-Fertilization: Yiddish and its Survival under the Israeli Language

Abstract

This article introduces cross-cultural communication and linguistic cross-fertilization by exploring the fascinating and multifaceted Yiddish language and its survival in Israeli, the result of the *fin-de-siècle* Hebrew revival. Yiddish is a 1,000-year-old Germanic language with Latin, Hebrew, and Aramaic substrates, with most dialects having been influenced by Slavonic languages. Yiddish is characterized by a unique style that embeds psycho-ostensive expressions throughout its discourse.

Keywords

Endangered languages, Cross-Cultural communication, Yiddish, Hebrew, Aboriginal

The Yiddish Language

Yiddish is a 1,000-year-old Germanic language with Latin, Hebrew, and Aramaic substrates, with most dialects having been influenced by Slavonic languages. It is known for the use of gestures, *klezmer* music, a self-deprecating sense of humour (different from Anglo-Aussie sense of humour), psycho-ostensive expressions embedded throughout its discourse, and bilingual tautological expressions.

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Examples of Psycho-Ostensive expressions

Below are some examples of psycho-ostensive expressions in Yiddish (Matisoff 1979):

(1) Bono-recognition
איך בין, **ברוך השם**, אויך אַלע יידן געזאָגט געוואָרן, געזונט און שטאַרק.
I am—**blessed be the name [of God]**, may it be possible to say that about all Jews—healthy and strong.
(אני, **ברוך השם**, הלוואי שאפשר יהיה להגיד זאת על כל היהודים, בריא וחזק.)

(2) Malo-recognition
איצט זאָגט זי, זי וועט חתונה האָבן מיט א פראַנצויז, **ווייַ איז צו מיר!**
Now she says she will marry a Frenchman, **oh woe is me**.
(עכשיו היא אומרת שהיא תתחתן עם צרפתי, **אבוי לי**.)

(3) Bono-petition
פון ערשטן מאַן האָב איך פיר קינדערלעך, **זאָלן געזונט זיַין**.
From my first husband I have four children, **may they be healthy**.
(מבעלי הראשון יש לי ארבעה ילדים, **שיהיו לי בריאים**.)

(4) Malo-petition
ער האָט בייַ מיר אויסגענאַרט מיַינע פופציק דאָלאַר, **אַ בראָך צו אים!**
He cheated me for fifty dollars, **may a disaster happen to him**.
(הוא רימה אותי בחמישים דולר, **שיבוא אסון עליו!**)

(5) Bono-fugition
מיַין טאָכטער, **קיין בייז אויג זאָל איר ניט שאַטן**, עסט גוט.
My daughter – **may no evil eye harm her** – eats well.
(הבת שלי, **שעין הרע לא תזיק לה**, אוכלת טוב.)

Bilingual Tautological Expressions

A bilingual tautological expression is a phrase that consists of two words that mean the same thing in two different languages. An example of a bilingual tautological expression is the Yiddish expression מים אחרונים וואַסער *máyim akhróynem váser*. It literally means "water last water" and refers to "water for washing the hands after a meal, grace water'. Its first element, *máyim*, derives from the Hebrew מים ['majim] "water." Its second element, *váser*, derives from the German *Wasser* "water."

Yiddish abounds with both bilingual tautological compounds and bilingual tautological first names. The following are examples of bilingual tautological compounds in Yiddish:

- פֿינצטער חושך *fíntster khóyshekh* "very dark," literally "dark darkness," traceable back to the German word *finster* "dark" and the Hebrew word חושך *ħōshekh* "darkness."
- חמור-אייזל *khameréyzl* "womanizer," literally "donkey-donkey," traceable back to the Hebrew word חמור [ħă'mōr] "donkey" and the German word *Esel* "donkey."

The following are examples of bilingual **tautonyms**, and specifically bilingual tautological first names, in Yiddish:

- דוב-בער *Dov-Ber*, literally "bear-bear," traceable back to the Hebrew word דב *dov* "bear" and the German word *Bär* "bear."
- צבי-הירש *Tsvi-Hirsh*, literally "deer-deer," traceable back to the Hebrew word צבי *tsvi* "deer" and the German word *Hirsch* "deer."
- זאב-וואָלף *Ze'ev-Volf*, literally "wolf-wolf," traceable back to the Hebrew word זאב *ze'ev* "wolf" and the German word *Wolf* "wolf."
- אריה-לייב *Arye-Leyb*, literally "lion-lion," traceable back to the Hebrew word אריה *'arye* "lion" and the German word *Löwe* "lion."

Yiddish Linguicide: רצח יידיש rétsakh yídish (Israeli for the "murder of Yiddish")

Yiddish as a secular language was subject to linguicide (language killing) on three different fronts:

(1) The Holocaust
(2) Communism
(3) Zionism

There were 13 million Yiddish speakers (Katz 2011), among 17 million Jews worldwide, before the Holocaust. About 85% of the approximately 6 million Jews murdered in the Holocaust were Yiddish speakers (Birnbaum 1984). Yiddish was banned in the Soviet Union in 1948–1955.

Rozka Korczak-Marla (24 April 1921 – 5 March 1988) was a Holocaust survivor, one of the leaders of the Jewish combat organization in the World War II Jewish Vilna Ghetto, Abba Kovner's collaborator, and fighter at the United Partisan Organization (known in Yiddish as *Faráynikte Partizáner Organizátsye*).

In 1944 Rozka Korczak-Marla was invited to speak at the sixth convention of the Histadrut, General Organization of Workers in Israel, known in Israeli as ***hahistadrút*** *(haklalít (shel haovdím beérets israél))*. In her mother tongue, Yiddish, she spoke about the extermination of Eastern European Jews, a plethora of them Yiddish speakers. Immediately after her speech, David Ben-Gurion—the first General Secretary of the Histadrut, the *de facto* leader of the Jewish community in Palestine, and eventually Israel's (established 1948) first Prime Minister—came to the stage. What he said is shocking from today's perspective (Zuckermann 2020: 201):

זה עתה דיברה פה חברה בשפה זרה וצורמת על הצרות שפקדו את…
ze atá dibrá po khaverá ***besafá zará vetsorémet*** *al hatsarót shepakdú et…*
A comrade has just spoken here *in a foreign and cacophonous tongue* about the troubles inflicting the…

Earlier, in the 1920s and 1930s, *gdud meginéy hasafá*, 'The Battalion for the Defence of the Language' (Zuckermann 2020, 39-40; Shur 2000), whose motto was עברי, דבר עברית *ivrí, dabér ivrít* 'Hebrew [i.e., Jew], speak Hebrew!', used to tear down signs written in 'foreign' languages and disturb Yiddish theatre gatherings. However, this group's members looked for only Yiddish ***forms*** **rather than** ***patterns*** in the speech of the Israelis who did choose to speak 'Hebrew.' Astonishingly, even the anthem of the same language defendants regiment included a calque from Yiddish:

ועל כל מתנגדינו אנחנו מצפצפים
veál kol mitnagdénu anákhnu metsaftsefím
lit. 'and on all our opponents we are whistling'
i.e. 'we do not give a damn about our opponents,' 'we defy our opponents'

Whistling here is a calque (loan translation) of Yiddish פייפן *fáyfn* 'whistle + not give a damn.'

One should also consider Yiddish glottophagy rather than linguicide due to the modernization, globalization, and assimilation that affected Yiddish both in the New and the Old World, which was strongly felt by the early 1930s in both the Soviet Union and the United States.

The Survival of Yiddish beneath Israeli: יידיש רעדט זיך *yídish rédt zikh* (Yiddish for "Yiddish speaks itself")

Before the end of the second millennium, Ezer Weizman, then President of Israel, visited the University of Cambridge to familiarize himself with the famous medieval Jewish notes known as the Cairo Genizah. President Weizman was introduced to the Regius Professor of Hebrew, allegedly nominated by the Queen of England herself.

Hearing "Hebrew," the president, who was known as a *sákhbak* (friendly "bro"), clapped the professor on the shoulder and asked: מה נשמע *má nishmà*, the common Israeli "What's up?" greeting, which some take to mean literally "what shall we hear?", but which is, in fact, a calque (loan translation) of the Yiddish phrase וואָס הערט זיך *vos hért zikh*, usually pronounced *vsértsəkh* and literally meaning "what's heard?"

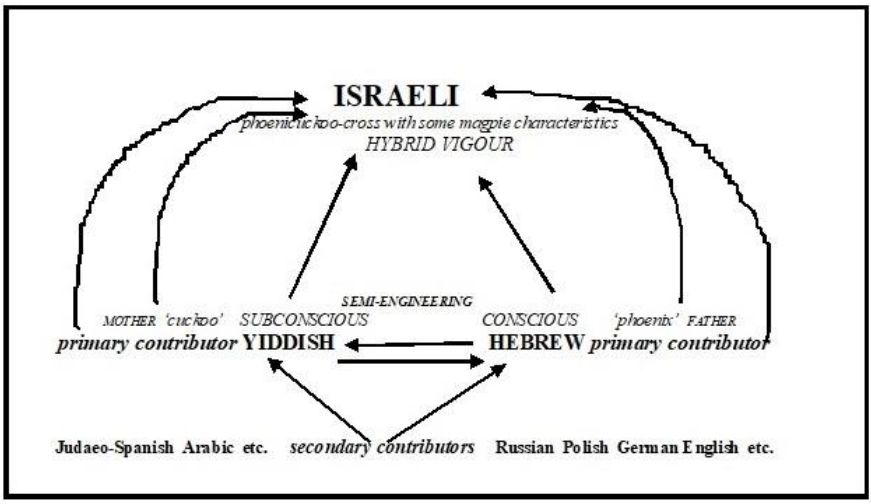
To Weizman's astonishment, the distinguished Hebrew professor did not have the faintest clue whatsoever about what the president 'wanted from his life.' As an expert of the Old Testament, he wondered whether Weizman was alluding to Deuteronomy 6:4: שמע ישראל *Shəmáʕ Yisraél* (Hear, O Israel). Knowing neither Yiddish, Russian (Что слышно *chto slyshno*), Polish (*Co słychać*), Romanian (*Ce se aude*), nor Georgian (რა ისმის *ra ismis*), let alone Israeli (מה נשמע *má nishmà*), the professor had no chance whatsoever of guessing the actual meaning ("What's up?") of this beautiful, economical expression.

Any credible answer to the enigma of Israeli requires an exhaustive study of the various influence of Yiddish on this אלטניילאנג '*altneu* langue' ("Old New Language")—cf., the classic אלטניילאנד *Altneuland* (Old New Land"), written by Theodor Herzl, the visionary of the Jewish State in the old-new land. I analyze אלטנייי *altneu* also as Hebrew על תנאי (Israeli *al tnáy*) 'on condition' [that we embrace the hybridity of the Israeli language].

At the beginning of the twentieth century, Yiddish and Hebrew were rivals to become the language of the future Jewish State. At first sight, it appears that Hebrew has won and that, after the Holocaust, Yiddish was destined to be spoken almost exclusively by ultra-Orthodox Jews and some eccentric academics. However, closer scrutiny challenges this perception. The victorious Hebrew may, after all, be partly Yiddish at heart.

Yiddish **survives** *beneath* Israeli phonetics, phonology, discourse, syntax, semantics, lexis, and even morphology, although traditional and institutional linguists have been most reluctant to admit it. Israeli is not רצח ייִדיש *rétsakh yídish* (Israeli for 'the murder of Yiddish [by Hebrew]') but rather ייִדיש רעדט זיך *yídish redt zikh* (Yiddish for 'Yiddish speaks itself [beneath Israeli]'). The following figure illustrates the hybrid genesis of the Israeli language:

Fig. 1. The Hybrid Genesis of Israeli



What makes the 'genetics' of Israeli grammar so complex, thus supporting my model of Israeli genesis, is that the combination of Semitic and Indo-European influences is a phenomenon occurring already within the primary (and secondary) contributors to Israeli. Yiddish, a Germanic language with a Latin substrate (with Slavonic languages that have influenced most dialects), was shaped by Hebrew and Aramaic. On the other hand, Indo-European languages, such as Greek, played a role in pre-medieval varieties of Hebrew (see, for example, Hellenisms in the Old Testament). Moreover, before the emergence of Israeli, Yiddish and other European languages influenced Medieval and Maskilic variants of Hebrew (Glinert 1991), which, in turn, shaped Israeli (in tandem with the European contribution).

When taken to its extreme, this approach might lead to the bitter question: ?הרצחת וגם ירשת *harotsákhto vegám yoróshto* (Israeli *aratsákhta vegám yaráshta)* (Hebrew for 'Hast thou killed, and also taken possession?', 1 Kings 21:19)? Nevertheless, I would advocate a more positive, reconciliatory atti-

tude: cultures, through language, have their intriguing ways of developing and evolving. One should not bear a grudge. What one might consider as 'mistakes' today might well be tomorrow's grammar; the stopgaps of the present are the infrastructure of the future. However, if you are a *mámə lóshn̩* (Yiddish for 'mother tongue'), a lover who is reluctant to accept such a liberal view, you might be consoled by the fact that, after all, Yiddish survives beneath one of its 'killers,' Israeli. Thus, as long as Israeli survives (and American will not kill her during our lifetime), Yiddish survives too.

Israeli patterns have often been based on Yiddish, Russian, Polish, and sometimes 'Standard Average European.' This observation is not to say that the revivalists, had they paid attention to patterns, would have managed to neutralize the impact of their mother tongues, which was often *subconscious*.

Although they engaged in a campaign for linguistic purity (they wanted Israeli to be Hebrew, despising the Yiddish 'jargon' and negating the Diaspora and the diasporic Jew (Zuckermann 2020), the language that revivalists created mirrors the very hybridity and foreign impact they sought to erase. The revivalists' attempt to

(1) deny their (more recent) roots in search of Biblical ancientness,
(2) negate diasporism and disown the 'weak, dependent, persecuted' exilic Jew and
(3) avoid hybridity (as reflected in Slavonized, Romance/Semitic-influenced, Germanic Yiddish itself, which they despised)

failed.

Interestingly, Yiddish itself is multi-sourced, with a necessary Hebrew (and Aramaic) component. Thus, there are cases of Yiddish and Hebrew simultaneously influencing Israeli, in which the relevant Yiddish features themselves stem from the very same Hebrew elements involved. For example, in the case of calques, the form preferred by Israeli is often the Yiddish one, rather than its Hebrew equivalent, which could be its ultimate source.

Consider, for example, Israeli נעשׂה לו חושך בעיניים *naasá lo khóshekh baenáim*, lit. 'Darkness has been made in his eyes,' i.e., 'He saw blackness (after bad news).' This is a calque of Yiddish ס'איז אים פֿינצטער געוואָרן אין די אויגן *siz im fíntstər gevórn̩ in di óygn̩* 'ditto', which might in turn be an adaptation of Hebrew חשכו עיניו [ħåʃˈkʰu: ʕeˈnåw], lit. 'His eyes became dark,' i.e., 'He saw blackness (after bad news).' The latter is rare in Israeli, while the former is commonly used.

Similarly, Israeli לך תדע *lekh tedá*, lit. 'Go, know!', i.e. 'Go figure!', is a calque of Yiddish גיי ווייס *gey veys* 'id.' (cf. French *va savoir*), which could perhaps, in turn, be an adaptation of Mishnaic Hebrew צא ולמד [sˤe ulˈmad], lit. 'Go learn!',

or Mishnaic Hebrew צא וראה [sˤe urˈʔe], lit. 'Go see!', or Mishnaic Hebrew צא וחשב [sˤe waħăˈʃobʰ], lit. 'Go think!', all of which in practice meant 'Pay attention!'. Go figure!

Consonant and Vowel Inventory

The Israeli consonant and vowel inventory, and its intonation, reflect Yiddish. When abroad, *Sabra Israelis* (Jews born in Israel) are often asked whether they are German or Dutch rather than Arab when the listener tries to identify their accent.

One linguistic example of the difference between an Orthodox, a Conservative, and a Reform Jew is that

- the Orthodox says *borukh ato* ***adonóy*** 'Blessed are you Lord' (ברוך אתה אדוני);
- the Conservative—just like Israelis—pronounces the same phrase as *barukh ata* ***adonáy***;
- the Reform says *barukh ata,* ***I don't know***!

The point at stake is that Ashkenazim used to pronounce *adonáy* 'Lord' as *adonóy*. However, Israelis' pronunciation of the *kamáts* vowel (Hebrew [å], known in Hebrew as קָמַץ [qåˈmasˤ]) now follows the Sephardic ([a]), rather than Ashkenazic Hebrew ([o]). Consider also Standard Yiddish *khókhəm* 'wise guy' (Polish Yiddish *khúkhəm*) versus the Israeli pronunciation of the same word *khakhám* (חכם).

Likewise, a non-geminate *t* is pronounced [t] following the Sephardim, rather than [s] as in Ashkenazic Hebrew, as in Ashkenazic Hebrew *leshóynəs* 'tongues' versus the Israeli pronunciation *leshonót* (לשונות).

Therefore, when asked about the phonetics of Israeli, many distinguished linguists claim that Israeli's sounds reflect the Sephardic pronunciation tradition. However, this is a mere *pro forma* 'lip service': Unlike Israeli purists, I believe that the pronunciation of a Yemenite (a Jew originally from Yemen) speaking Israeli is the exception rather than the norm. Such *mizrahi* pronunciation is gradually disappearing, one of the reasons being that Yiddish-speaking Ashkenazic Jews primarily created Israeli, and thus its standards are different from the Semitic standards of Hebrew. Furthermore, as indicated by *sfirát yehudéy érets israél*, a census conducted in 1916–18 (cf. Bachi 1956, 67-69), the Ashkenazim were the ones most receptive to the 'Hebrew revival': 61.9% of Ashkenazic children and 28.5% of Ashkenazic adults spoke Israeli in 1916–18.

The percentage of Israeli-speakers among Sephardim (constituting most of the veteran residents in *Eretz Yisrael*) and the other *mizrahim* (excluding the Yemenites) was low: only 18.3% of Sephardic children and 8.4% of Sephardic adults spoke Israeli in 1916-18, while 18.1% of *mizrahi* children (excluding Sephardim and Yemenites) and 7.3% of *mizrahi* adults spoke Israeli (cf. 53.1% among Yemenite children and 37.6% among Yemenite adults). *Mizrahim* (plural of *mizrahi*) are Jews descending from the Middle East (as opposed to those from Europe and other places), mostly from Muslim-majority countries.

Yiddish has determined the consonantal inventory of Israeli in the following ways:

Neutralization of the pharyngeals ק, ט and צ:

Neutralization of the Hebrew pharyngealized (emphatic) consonants ק (*q*), ט (*ṭ*) and צ (*ṣ*). The sounds [q], [tˤ], and [sˤ] do not exist in Yiddish at all. Consequently, Hebrew ק [q] is pronounced in Israeli [k], equal to Israeli כ [k] and Yiddish ק. Hebrew ט [tˤ] is pronounced in Israeli [t], equal to Israeli ת (t) and Yiddish ט. Hebrew צ [sˤ] is pronounced in Israeli [ts], which did not exist in Classical Hebrew but which did exist in Yiddish and Ashkenazic Hebrew, pronounced [ts]. Naturally, this does not only apply to the pronunciation of pre-existent Hebrew words. In borrowing foreign lexical items, ק, ,ט and צ are the letters used in Israeli to represent imported [k], [t], and [ts], respectively.

Neutralization of ע, ח, ה and א:

Neutralization of the Hebrew pharyngeals and glottals ע (ʕ), ח (*ħ*), ה (*h*) and א (*ʔ*). In Yiddish, there is neither [ʕ] nor [ħ], whereas [h] and [ʔ] are very weak. By and large, Hebrew ע [ʕ], א [ʔ] and ה [h] are all 'pronounced' in Israeli in the same way: most of the time, and they are not pronounced. They are only pronounced (both ע and א – [ʔ], while ה – [h]) when in a post-consonantal position *within uncommon words*. Some speakers also pronounce Israeli ה [h] at the beginning of phrases. Compare the frequently used Israeli נראה *nirá* [niˈʁa] 'seemed (masculine singular)' (where the glottal stop is not pronounced) to the rare תשאל *tish'él* [tiʃʔel] 'interrogated, questioned (masculine singular)' (where the glottal stop is pronounced). Hebrew ח [ħ] is pronounced in Israeli [χ], equal to Israeli כ [χ] (from Hebrew [kʰ]).

Hebrew alveolar trill versus the Israeli unique lax uvular approximant:

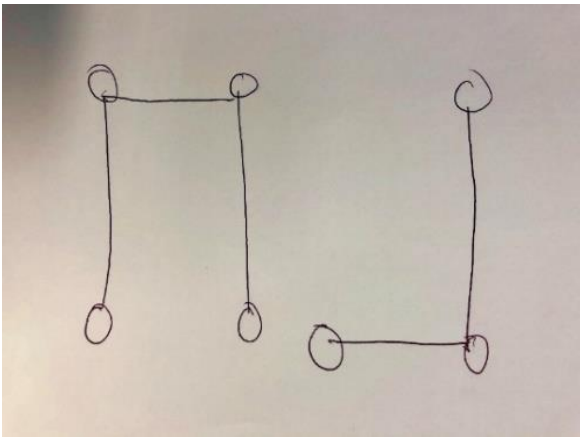
The phonetic shift of the Hebrew alveolar trill r [r] to a lax uvular approximant [ʁ], similar to the [ʁ] in many Yiddish dialects.

So, one should not be too surprised to see an Israeli child spelling:

- אכווטב *ikvotáv* instead of עקבותיו 'his traces' (cf. Hopkins 1990: 315)
- משקנטה *mashkánta* instead of משכנתא 'mortgage'
- מתתה *mataté* instead of מטאטא 'broom'

In Yiddish one would say that this child spells נח מיט זיבן גרייזן *nóyekh mit zíbn gráyzn* 'נח ("Noah") with seven errors' (e.g., נאייעך *nóyekh*)—cf. נח מיט זיבן קרייזן *nóyekh mit zíbn kráyzn*, '"Noah" with seven circles':

Fig. 2. נח מיט זיבן קרייזן *nóyekh mit zíbn kráyzn*, '"Noah" with seven circles'



Syllable Structure

The question is, where does the Israeli ($^{s}_{ʃ}$)(C)(C)V(C)(C)($^{s}_{ʃ}$) structure come from? The syllable structure in Yiddish is identical, although Yiddish can also have a syllabic consonant (*CC*) (with a dot under the second C). Consider Yiddish *érshtn̩s* 'first of all' or *shtrúdl̩*, and the latter pronounced in Israeli as *shtrúdel*. As opposed to some English speakers, for example, who pronounce *Sweden* as *swi:dn̩*, most Israelis say *komunízem* rather than *komunízm*. Intriguingly, whereas Lincoln College (Oxford) is pronounced *línkən* (the sec-

ond *l* is not pronounced), Israeli students tend to call it *línkolen*. That said, Yiddish is far from being like Czech, where a whole sentence can have no vowel. For example, *Strč prst skrs krk* means 'Put your finger down your throat!'

Penultimate Stress

I believe that, as opposed to the traditional view that the unmarked Israeli stress is final and follows the Sephardic traditions, the essential stress in Israeli is trochaic (penultimate). This stress explains, for example, the native pronunciation of *albáni* 'Albanian' rather than the prescriptive *albaní*. When I asked a friend of mine, who has lived in Tel Aviv for years, whether we can meet at *rekhóv yehudá hamakabí* (Judah the Maccabi Street), she claimed to have never heard of it. I had to pronounce it correctly as *yúda makábi*. The stress of Israeli names and words often changes from final to the penultimate, as in Yiddish and Ashkenazic Hebrew.

In some cases, penultimate stress is caused by several motivations, such as Yiddish influence, endearment, differentiation, Arabic influence, and alienation. This stress is yet another manifestation of multiple causation and cross-fertilization, an essential motif in this book. Penultimate stress in Israeli can thus be marked as plus/minus emotion (endearment/alienation). Consider the following examples of penultimate stress in Israeli:

1. Anthroponyms, for example the female first names שושנה *shoshána*, יפה *yáfa*, שׂרה *sára*, דבורה *dvóra*, יונה *yóna*, ברכה *brákha*, נחמה *nekháma*, שירה *shíra*, דינה *dína*, רינה *rína*, חיה *kháya*, חווה *kháva* and אסתר *ester*. Penultimately-stressed male first names include חיים *kháim*, יהודה *yúda*, משה *móshe* (cf. Yiddish משה *móyshə*), מנחם *menákhem*, נחמן *nákhman*, יורם *yóram*, דוד *dávid* and יונה *yóna*. As in these examples in Israeli, the stress of Yiddish polysyllabic first names is never final. The penultimate stress here might imply affection. Compare it to the non-anthroponymic *khatúla* 'female cat', an endearing form of Israeli חתולה *khatulá* 'female cat.'

   Furthermore, many of the penultimately-stressed Israeli names, and especially the female ones, can serve as a lexical item when stressed on the final syllable. For example, דבורה *dvorá* 'bee', שׂרה *sará* 'female minister,' חיה *khayá* 'animal,' חווה *khavá* 'farm' and יפה *yafá* 'beautiful (feminine plural).' Thus, it is possible to explain the penultimate stress as mere differentiation.

Compare this with the **minimal pairs** that are not related to stress:

- לאפר *lea**f**ér* 'to flick ash from a cigarette/cigar' versus לאפר *lea**p**ér* 'to put make up on'
- השתבץ *hishta**v**éts* 'had a heart attack (masculine singular)' versus השתבץ *hishta**b**éts* 'was assigned (masculine singular).'
- התחבר *hitkha**v**ér* 'became friends (with) (masculine singular)' versus התחבר *hitkha**b**ér* 'became linked (to) (masculine singular).'

Consider the following Israeli sentence, which would have been impossible to utter in Hebrew:

כיום אני נותן לפחות סטודנטים 70% מאשר בעבר.
*kayóm aní notén **lefakhót** shivím akhúz **lepakhót** studéntim meashér baavár*
These days I give **at least** 70% **to fewer** students than in the past.

2. Toponyms, for instance the cities/towns בנימינה *binyamína*, נתניה *natánya* (cf. puristic *netanyá*), חיפה *kháyfa* (cf. puristic *kheyfá*), רחובות *rekhóvot* (cf. *rekhovót* 'streets'), גדרה *gedéra*, טבריה *tvérya*, ראש פינה *rosh pína*, זכרון (יעקב) *zíkhron (yaakov)*, ראשון לציון *ríshon letsíon* or just *ríshon*. Note that the usual stress of Yiddish toponyms is penultimate.

Intonation

While on a recent state visit to Israel, President Trump of the United States took part in a ceremony to honour the country's fallen. Laying a wreath on the tomb of the Unknown Soldier near Jerusalem, he was confused to discover that the inscription read

חיים שוסטר, חייל וחייט
kháim shúster, khayál vekhayát
i.e. *Haim Schuster, Soldier and Tailor*

'But why do you give his name?' he demanded of Netanyahu, the Israeli Prime Minister. 'Surely, this soldier is meant to be anonymous.'

'Oy!' replied Netanyahu with a strong Yiddish intonation: 'As a *sol*dier, he was unknown, but as a ***tai***lor?!?'.

People familiar with both Yiddish and Israeli find it hard to deny that the intonation of Israeli is very similar to that of Yiddish. *Mizrahi* Israelis have acquired this very same intonation. There was an Israeli TV commercial for the *Toto* football lottery, in which a *mizrahi* Jew is walking in a stadium (built by the *Toto*) and praising the activities of the *Toto* Committee. Among other things, he produces a sentence that became a catch-phrase for Israelis: חיים, תדליק את האורות בבקשה! *kháim, tadlík et aorót bevakashá* 'Haim, switch on the [projector] lights please!'. The relevant fact is that this Israeli, apparently of *mizrahi* descent, possesses an intonation that is indeed very Yiddish, for example, when he states:

טוטו אני ממלא כל שבוע? ממלא! הטוטו מקדם את הספורט בישׂראל? מקדם! אז אני שותף!
tóto ani memalé kol shavúa? memalé! atóto mekadém et aspórt beisraél? mekadém! az aní shutáf!
Toto (do) I fill every week? I fill! Does the Toto promote the sport in Israel? (It) promotes! So I am a part (of it)! (i.e., a part of the important contribution of the Toto to Israeli society).

At the end of 2004, when the New Terminal of Ben-Gurion Airport was opened, Israeli TV showed a commercial for it. A woman comes back from Paris, and when her family comes to pick her up from the airport, they ask her about the trip. She does not stop praising the shops and service at… the airport. When one of the family members suddenly asks about Paris, she replies using a denigrating Yiddish intonation:

Paris? Paris!,

funnily implying that Paris is not a big deal compared with the new terminal of Ben-Gurion Airport. [I wish this book could come with a built-in intonation kit.]

Consider also the rise-fall intonation in questions expecting affirmation in the form of 'Of course not!' (cf. Weinreich 1956, 642; Blanc 1965, 189), for example, אתה הרי לא הלכת לשם?! *atá aréy lo alákhta leshám?!* 'You surely did not go there [did you?]!' or 'Surely you did not go there?!'. The unique intonation of sentences with Y-movement brings us to syntax.

Word order

Ask an Israeli what the Biblical sentence אֲבָנִים שָׁחֲקוּ מַיִם [ʔăbʰåˈni:m ʃåħăˈqu: ˈmajim] (see Job 14:19) means and they would most likely tell you that the stones eroded the water. Of course, on second thought, they would guess that semantically this is impossible and that it must be the water that eroded the stones.

Like Standard Average European, the canonical constituent order in Israeli is Subject–Verb–Object. More specifically, it is either AVO (A being a transitive subject), e.g., *a-yéled akhál et a-tapuákh* 'The boy ate the apple,' or SV (S being an intransitive subject), e.g., *a-yéled nirdám* 'The boy fell asleep,' or SVE (E being an extended intransitive), e.g., *u makhá al a-tipúl bo* 'He protested against his treatment.' Israeli linguists often claim that Israeli constituent order, AVO(E) / SV(E), demonstrates the impact of Mishnaic Hebrew, which had it as the marked order (for emphasis/contrast)—as opposed to Biblical Hebrew, usually characterized by Verb-Subject-Object order (see *vayómer adonáy el moshé* 'Said God to Moses').

As Rosén (1981, 49) notes, the Israeli constituent order is highly flexible as in German and Russian. It includes what is known in America as Y-Movement (i.e., Yiddish movement, left dislocation, cf. thematicization, and topicalization, cf. Prince 1981). A customer enters a department store in New York and asks the assistant, 'Do you have Nike shoes here?'—'No, I am sorry, goodbye!', comes the reply. The owner happens to overhear, and he takes his employee to one side and rebukes him. 'You should have said, "We have no Nike, but I can give you Adidas, New Balance, or Hamgaper [Israeli company],"' he explains. The next day, a customer asks the assistant, 'Do you have toilet paper?' He replies, 'We're out of toilet paper. *Sandpaper—I can give you!*'. This reply is, of course, possible in Israeli, but one needs to use the correct intonation.

Verb-Subject disagreement

I often hear the sentence *koév li a-béten*, literally 'hurts (masculine) me the stomach (feminine),' i.e., 'My stomach hurts.' If we follow traditional grammar, this is a 'terrible mistake' since there is no agreement between the verb and the subject that follows it. The utterer of this sentence knows that *béten* 'stomach' is feminine but still says *koév* 'hurts (masculine).' So what is going on here? Well, have a look at Yiddish: *es tut mir vey der boykh*, literally 'it hurts me the stomach,' i.e., 'My stomach hurts': The verb 'hurts' precedes the subject 'stomach.' So Israeli *koév* seems to reflect Yiddish *es tut mir vey* 'it hurts,' which does not have to agree with the following subject.

Similarly, I once heard a native speaking student at Tel Aviv University asking her colleague *matsà khén be-enékha a-artsaá a-zòt?*, lit. 'found (masculine) grace in your eyes the lecture (feminine) this?', i.e. 'Did you like this lecture?'.

There are also cases of number disagreement. For example, *éyze dvarím shalákhta li?* 'Which (masculine singular) things (masculine plural) you sent to me?', i.e., 'Which things did you send me?'. Here, the disagreement is not between the verb and the subject but within the noun-phrase constituting the direct object (*éyze dvarím*).

Modifier preceding Noun

In Israeli, as in Hebrew, the modifier usually follows the noun it describes. However, there are cases in Israeli where this is violated. Consider the following:

- נדב קינוחים *nadáv kinukhím*, lit. 'Nadav desserts,' i.e., 'Nadav's desserts,' rather than what one would have expected from Hebrew קינוחי נדב *kinukhéy nadáv*, lit. 'desserts-CONSTRUCT Nadáv.'
- סמי בורקס *sámi burékas*, lit. 'Sammy bourekas", i.e., 'Sammy's bourekas (börek)," rather than what one would have expected from Hebrew בורקס סמי *burékas sámi*, lit. 'bourekas-CONSTRUCT sámi.'

Juxtapose these expressions with Israeli שושן פורים *shushán purím*, lit., 'Shushan Purim,' i.e., 'Purim of Shushan,' the day on 15 Adar on which Jews in Jerusalem celebrate Purim. The word order in *shushán purím* follows the Yiddish. In Hebrew, it should have been פורים שושן *purím shushán*. I have found hundreds of business names following such Adjective+Noun word order.

Auxiliary verbs

Analyticity is not restricted to Noun Phrases (NP). There are many non-Hebrew, periphrastic, complex verbal constructions in Israeli. In Israeli, both the desire to express swift action and the grammatical construction (using 'auxiliary verbs' followed by a noun) stem from Yiddish. However, one should not regard such a construction as a nonce, *ad hoc* lexical calque of Yiddish. The Israeli system is productive, and the lexical realization often differs from that of Yiddish. Consider the following Yiddish expressions all

meaning 'to have a look': געבן אַ קוק ***gébn*** *a kuk*, lit. 'to *give* a look,' טאָן אַ קוק ***ton*** *a kuk*, lit. 'to *do* a look' and the colloquial כאַפן אַ קוק ***khapn*** *a kuk*, lit. 'to *catch* a look.' Compare these with Israeli שׂם *sam* 'put' as in שׂם צעקה *sam tseaká* 'shouted' (lit. 'put a shout'), נתן *natán* 'give' as in נתן מבט *natán mabát* 'looked' (lit. 'gave a look'; cf. העיף מבט *heíf mabát* 'looked,' lit. 'threw a look,' cf. English *threw a look*, *threw a glance* and *tossed a glance*)—cf. the Hebrew-descent הביט *híbít* 'looked at').

Consider also the semantic shift in Hebrew הרביץ תורה (Israeli *irbíts torá*) 'taught the Law' > הרביץ מוסר (*irbíts musár*) 'rebuked' > הרביץ מכות (*irbíts makót*) 'beat strokes, hit hits' (i.e. 'beat, hit,' 'deal out hits') > Israeli הרביץ *irbíts* 'hit, beat; gave' > הרביץ מהירות *hirbíts meirút* 'drove very fast' (מהירות *meirút* meaning 'speed'), הרביץ ארוחה *irbíts arukhá* 'ate a big meal' (ארוחה *arukhá* meaning 'meal') etc.—cf. English *hit the buffet* 'eat a lot at the buffet,' *hit the liquor/bottle* 'drink alcohol.' In other words, an analytic construction is preferred to a synthetic one. Consider also Israeli דפק הופעה *dafák ofaá*, lit. 'hit a show,' i.e., 'dressed smartly.'

Overt borrowing

There are scores of visible loanwords in Israeli from Yiddish (note that the Israeli spelling is often different from the Yiddish). Consider the following Israeli words beginning with ש *sh* [ʃ]: שפיץ *shpits* 'sharp tip, spearhead', שוויץ *shvits* 'swagger, panache,' שוונג *shvung* 'swing, zest,' שלוק *shluk* 'gulp, sup, sip,' שלומפר *shlúmper* 'slob,' שמונצס *shmóntses* 'gadgets, odds and ends,' שמ(א)טס *shmátes* 'rags,' and שפכטל *shpákhtel* 'spatula, trowel.'

Other Yiddishisms in Israeli include the following: קונץ *kunts* 'trick', גרפס *greps* 'burp, belch,' ברוך *brokh* 'foul-up, hitch, mishap, disaster, fiasco, mess,' פיצ'פקס *pícheфkes* 'gadgets, frills,' נ(ע)בך *nébekh* 'nebbish, miserable,' מיידלה *méydale* 'girlie,' בובלה *búbale* 'sweetheart,' פרווה *párve* 'parve, neither dairy nor meat,' או טו טו *ototó* 'any minute (now), shortly,' קוטר *kúter* 'whiner, complainer, grouch, sourpuss, griper' (cf. לקטר *lekatér* 'to whine, complain'), פלונטר *plónter* 'tangle, mess, snarl-up,' בוק *bok* 'clod, dolt,' בויד(ע)ם *bóydem* 'attic,' and אלטע זאכן *álte zákhen*, lit. 'old things,' referring to 'second-hand merchandise' or to the person selling them from a car/wagon (cf. junkman), used even by Israeli Arabs.

There are many gastronomic Yiddishisms, for example, בייגלה *béygale* 'bagel,' גפילטה פיש *gefílte fish* 'stuffed fish,' קרפלך *krépalakh* 'kreplach, ravioli,' קניידלך *knéydalakh* 'dumplings, (matzah) balls,' לטקס *látkes* 'potato pancakes,'

בלינצ'ס *blínches* (*blintshes*) 'blin/blini, pancake, crêpe,' and קישקס *kíshkes* 'stuffed intestines.'

Clothing Yiddishisms include גטקס *gátkes* 'long johns', קפוטה *kapóta* 'capote, long coat/cape,' and שטריימלך *shtréymalakh* (plural) 'shtreimel, beaver hat, round, broad-brimmed hat edged with fur worn by some Hasidic Jews.'

Although the following Israeli words are of Hebrew pedigree ultimately, they entered Israeli from Yiddish. Note that their pronunciation and specific meaning by and large follow Yiddish rather than Hebrew: חברהמן *khévreman* 'swell guy, good sport', חבר'ה *khévre* 'guys, the gang,' חוכם *khúkhem* 'wise-guy, dumb ass, fool,' בקיצר *bekítser* 'shortly, practically,' העיקר *haíker* 'the main thing,' מילא *méyle* 'so be it, never mind, all right then,' ממילא *miméyle* 'in any case, by itself,' בלבוס *balebós* 'landlord, burgher,' משפוחה *mishpúkhe* 'family, (the whole) tribe,' and כלבויניק *kolbóynik* 'a table bowl for rubbish (in a kibbutz); one who knows how to do everything.'

Often, Israelis use a Yiddishism without realizing that its ultimate (morphological) origin is Hebrew. Consider the following:

- Israeli תכלס *tákhles* 'to the point, in practice, in reality, nitty-gritty, the realities or basic facts of a matter, the heart of the matter,' traceable to (Mishnaic) Hebrew תכלית [takʰ'li:t] 'purpose' (<Biblical Hebrew 'end, edge, border').
- Israeli דוס *dos* 'Orthodox Jew,' traceable to (Mishnaic) Hebrew דת [dåt] 'religion' (<Biblical Hebrew 'law') (cf. Yiddish דת *das*; *dos* being Ashkenazic Hebrew).
- Israeli בלגולה *balagúle* 'uneducated person, wagoner, coachman', consisting of two Hebrew elements, בעל ['baʃal] 'owner' and עגלה [ʕăgå'lå] 'cart,' but introduced in Yiddish.
- Israeli בלבוסטה *balabúste* '(boss-like) energetic, orderly landlady/housekeeper,' from the Yiddish בעל-הביתטע *balebóste*, consisting of two Hebrew elements, בעל ['baʃal] 'owner' and בית ['bajit] 'house,' as well as the Slavonic-descent Yiddish feminine suffix טע [te].

Cf. Adelaide (Australia)'s *Ballaboosta* restaurant, which happens to be Lebanese: I went there for the first time because of the name (I thought it was an Eastern European Jewish restaurant); I stayed there for the food…

- Israeli שולם *shólem* 'peace (between friends, after a quarrel),' traceable to Hebrew שלום [ʃå'lo:m] 'peace.'
- Israeli טוכס *túkhes* 'bottom, bum', traceable to Hebrew תחת ['tåħat] (Israeli *tákhat*) 'below.'

This phenomenon is the opposite of 'calquing' (cf. 'semantic loan'), namely the use of a Hebrew lexical item induced by its meaning in Yiddish, without the native speaker realizing that Yiddish played a role. This use leads to a discussion of disguised borrowing, the covert lexical influence of Yiddish and other European languages on Israeli.

Calquing (loan translation)

According to my calculations, approximately 50% of the 18,000 idioms and phrases in Rosenthal's 2009 *milón hatserufím (Dictionary of Hebrew Idioms and Phrases)* are calques of languages other than Hebrew. Consider the following Israeli phrases (see other examples in Zuckermann 2011: 196) that result from calquing expressions in Yiddish, sometimes accompanied by other languages, following the Congruence Principle:

- תפס את אלוהים בביצים *tafás et eloím babeytsím*, lit. 'caught God in the testicles', i.e., 'was very successful', calques האט געכאפט גאט ביי די אייער *hot gekhápt got bay di éyer*.
- משוגע על כל הראש *meshugá al kól arósh*, lit. 'crazy on all the head', i.e. 'crazy', calques משוגע אויפן גאנצן קאפ *meshúge áfn gántsn kop*.
- לב שבור *lev shavúr*, lit. 'heart+broken,' i.e., 'broken heart,' calques א צעבראכן הארץ *a tsebrókhn harts*.
- סנונית ראשונה *snunít rishoná*, lit. 'swallow+first,' i.e., 'first swallow,' i.e., 'one swallow does not make a spring,' calques די ערשטע שוועלבעלע *di érshte shvélbele*.
- יום הולדת *yom ulédet*, lit. 'day+birth,' i.e., 'birthday, birthday party' calques געבוירן-טאג *gebóyren-tog*.
- לא כל הנוצץ זהב *lo kol anotséts zaáv*, lit. 'not all the glitters gold', i.e. 'all that glitters is not gold', calques ניט אלץ וואס גלאנצט איז גאלד *nit alts vos glantst iz gold*.
- הכה בברזל בעודו חם *iká babarzél beodó kham*, lit. '[he] hit in the iron while it was hot,' i.e. 'strike while the iron is hot,' calques שמיד דאס אייזן כל זמן ס'איז הייס *shmid dos áyzn kol zmán siz heys*.
- מפחד מהצל של עצמו *mefakhéd meatsél shel atsmó*, lit. '[he is] afraid from the shadow of himself,' i.e. 'afraid of his own shadow,' calques שרעקן זיך פארן אייגענעם שאטן *shrékn zikh fárn áygenem shótn*.
- לכל כלל יש יוצא מן הכלל *lekhól klal yesh yotsé min aklál*, lit. 'to every rule there is exiting from the rule', i.e. 'every rule has an exception', calques אין יעדער כלל איז דא א יוצא מן הכלל *in yéder klal iz der a yóytse min haklal*.
- רך כמשי *rakh kaméshi* 'soft as silk', calques ווייך ווי זייד *veykh vi zayd*.

Israelis know that the Israeli word *perestroika* is a borrowing of the Russian-descent internationalism. However, few Israelis are aware that the above expressions are 'foreign' calques. Synchronically speaking, the **forms** in this phrase are 100% Hebrew; there is nothing to betray the non-Hebrew co-sources (Yiddish, Polish, Russian), which provided the **pattern** (cf. calques in Howell 1993). Then, it is no wonder that so many people miss much of the European impact on Israeli.

Phono-Semantic Matching

The following phono-semantic matching is partially 'incestuous' (Zuckermann 2003, 94-102) since Yiddish *shákhər* can be traced back to Hebrew *sáħar*:

Fig. 3. Israeli סחר מכר *sákhar mékher* 'trade'

Concluding Remarks

A woman in Israel was travelling on a bus with her young son. While she talked to him in Yiddish, he answered in Israeli. So, she urged him again and again:

רעד אויף יידיש
red af yídish
'Speak in Yiddish!'

An impatient Israeli was listening to the private conversation and told the woman:

גברת, למה לעזאזל את מתעקשת שהילד ידבר יידיש ולא עברית, פה זה ישראל
givéret, láma leazazél at mitakéshet sheayéled yedabér yídish veló ivrít, po ze israél
'Madame, why on earth do you insist that your son speaks Yiddish and not Hebrew, this is Israel here!'

The mother replied:

אני לא רוצה שהוא ישכח שהוא יהודי
aní lo rotsá sheú yishkákh sheú yeudí
'I don't want him to forget that he is Jewish.'

The impatient Israeli reflects the Mediterranean style of discourse prevalent in Israel beautifully. However, as this article demonstrated, he fails to recognize the cross-fertilization between Hebrew and Yiddish, as it manifests itself in any aspect within the Israeli language. Unknowingly, even the impatient Israeli speaks Yiddish within his Israeli.

Yiddish **survives** *beneath* Israeli phonetics, phonology, discourse, syntax, semantics, lexis, and even morphology, although traditional and institutional linguists have been most reluctant to admit it. Israeli is not רצח יידיש *rétsakh yídish* (Israeli for 'the murder of Yiddish [by Hebrew]') but rather יידיש רעדט זיך *yídish redt zikh* (Yiddish for 'Yiddish speaks itself [beneath Israeli]').

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He has also been working on imagination, symbolism, and semiotics. He has systematically used images to write philosophical papers in a series of *Imaginary Papers* and organized a big international event on imagination in Rio de Janeiro in 2018, *L'imagination*. As the President of the Brazilian Academy of Philosophy, he also has organized in Rio de Janeiro the event *Creativity'2019* in Honour of Newton da Costa 90th Birthday. In Geneva, he organized the workshop *Arbitrariness of the Sign*, part of the Saussure *Course in General Linguistics*, *1916-2016* Centenary.

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He was nominated "Chevalier de la Légion d'Honneur", by the President of the French Republic, on the occasion of the 50th anniversary of the CNRS for his scientific production. He was awarded the Alexandre Koyré Medal by the International Academy of History of Sciences in recognition of all of his works in 1990; Third World Academy of Sciences History of Science Prize and Medal, in recognition of his works in the history of Optics in 1990; the medal of the Organisation of the Islamic Conference Research Centre for Islamic History, Art and Culture in recognition of his contributions to scholarship in the History of Islamic Culture in 1991; the World Prize for the best book in the Islamic research awarded by the President of the Islamic Republic of Iran, for his works on the History of Arabic sciences in 1998; the Prize

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His recent publications include *The exoteric square of opposition*, Birkhäuser, Basel, Studies in Universal Logic, 2022 (in collaboration with Jean-Yves Beziau) and *V.A. Yankov on Non-Classical Logics, History and Philosophy of Mathematics*, Springer: Outstanding Contributions to Logic, 2022 (in collaboration with Alex Citkin).

Professor **Ghil'ad Zuckermann** (DPhil Oxford; PhD Cambridge, titular; MA Tel Aviv, summa cum laude) is Chair of Linguistics and Endangered Languages at the University of Adelaide, Australia. Since the beginning of 2017, he has been a chief investigator in a National Health and Medical Research Council (NHMRC) Research Project assessing language revival and mental health and the elected President of the Australian Association for Jewish Studies.

Prof. Zuckermann is the author of *Revivalistics: From the Genesis of Israeli to Language Reclamation in Australia and Beyond* (Oxford University Press, 2020), the seminal bestseller *Israelit Safa Yafa* (Israeli—A Beautiful Language; Am Oved, 2008), *Language Contact and Lexical Enrichment in Israeli Hebrew* (Palgrave Macmillan, 2003), **多源造**词研究 (A Study of Multisourced Neologization; East China Normal University Press, 2021), three chapters of the Israeli *Tingo* (Keren, 2011), *Engaging—A Guide to Interacting Respectfully and Reciprocally with Aboriginal and Torres Strait Islander People, and their Arts Practices and Intellectual Property* (2015), the first online *Dictionary of the Barngarla Aboriginal Language* (2018), *Barngarlidhi Manoo* (Speaking Barngarla Together) (2019) and *Mangiri, Yarda* (Barngarla Wellbeing and Nature) (2022). He is the editor of *Burning Issues in Afro-Asiatic Linguistics* (2012), *Jewish Language Contact* (2014), a special issue of the *International Journal of the Sociology of Language*, and the co-editor of *Endangered Words, Signs of Revival* (2014).

Professor Zuckermann is the founder of Revivalistics, a new global, transdisciplinary field of enquiry surrounding language reclamation, revitalization and reinvigoration. On 14 September 2011, he launched, with the Barngarla Aboriginal communities of Eyre Peninsula, South Australia, the reclamation of the Barngarla language. Professor Zuckermann is elected member

of the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) and the Foundation for Endangered Languages (FEL). He was President of AustraLex in 2013-2015, Australian Research Council (ARC) Discovery Fellow in 2007-2011, and Gulbenkian Research Fellow at Churchill College Cambridge in 2000-2004.

He has been a Consultant and Expert Witness in (corpus) lexicography and (forensic) linguistics in court cases all over the globe. He has taught at Middlebury College (Vermont), the University of Cambridge, University of Queensland, National University of Singapore, Shanghai Jiao Tong University, East China Normal University, Shanghai International Studies University, Hebrew University of Jerusalem, Ben-Gurion University of the Negev and University of Miami. He has been a Research Fellow at the Weizmann Institute of Science; Tel Aviv University; Rockefeller Foundation's Study and Conference Center, Villa Serbelloni, Bellagio, Italy; Harry Ransom Humanities Research Center, the University of Texas at Austin; Israel Institute for Advanced Studies, Hebrew University of Jerusalem; Institute for Advanced Study, La Trobe University; Mahidol University; and Kokuritsu Kokugo Kenkyūjo (National Institute for Japanese Language and Linguistics, Tokyo). He has been Denise Skinner Scholar at St Hugh's College Oxford, Scatcherd European Scholar at the University of Oxford, and scholar at the United World College of the Adriatic (Italy).

His MOOC (Massive Open Online Course), Language Revival: Securing the Future of Endangered Languages, has attracted 20,000 learners from 190 countries (speakers of hundreds of distinct languages):

https://www.edx.org/course/language-revival-securing-future-adelaidex-lang101x
http://www.adelaide.edu.au/news/news79582.html