

# Pictures and Reasoning: visual Arguments and Objections

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The paper contributes to the debates on visual argumentation. From the perspective of Peirce's Existential Graphs theory, I'll specify the logical background of visual arguments conception and demonstrate how it cooperates with arguments evaluative techniques. A particular emphasis is made on the visual ways of argument refutation. The paper ends with an example that shows the profits of visual argumentation once we need to see reasons for arguments dissents.

KEYWORDS: argument, diagrammatic reasoning, dissent, reasoning, visual argumentation, visuality.

## 1. INTRODUCTION

Although the debated on visual arguments are still in progress, the fact of visual argumentation is almost not disputed. Indeed, "people now live in a reality that is not merely visually permeated – it is visually mediated" (Groarke, Palczewski & Godden, 2016, p. 233). Once we admit the idea of visuality, we have to find "a legitimate place for visual elements within argumentation" (Dove, 2012, p. 223) and decide if they are a special class of arguments or not. The current paper contributes to this long-lasting discussion. It focuses on the problem of arguments refutation through visual reasoning.

The mixture of linguistic (most common) and visual levels in argumentation is not surprising. Almost all arguments are multimodal, and "some of the most used arguments are not verbal in character. They are mental or logical or cognitive operations that can be expressed verbally as well as visually. ... The verbal loses its prerogative of being the paradigm of all argumentation" (Roque, 2009, p. 9), and speaking of argumentation in terms of words and sentences (Fleming, 1996; Johnson, 2003) is not relevant. Argumentation is not only linguistics activity, and it also presumes a visual part. Meanwhile, I would only partly share

Johnson's autonomy thesis, as Godden (2013, p. 4) classifies it, due to which "visual argument is a distinct and autonomous type of argument, and is not to be treated as an extension of verbal argument" (Johnson, 2010, p. 2). Visual arguments are specific, but they are, first of all, arguments, and this fact groups them with other reasoning styles.

This paper starts by discussing the definition of visual argumentation. The third section pays attention to the concept of iconicity that specifies both why visual arguments are arguments, along with others, and why they are, nevertheless, exclusive. The fourth section briefly introduces normative frames for evaluation and refutation, while the fifth one scrutinizes an example.

## 2. TOWARDS VISUAL ARGUMENTS DEFINITION

Visual arguments are popular but not trivial for dealing with them. It is hard to know if a picture is an argument or not. Once it has been interpreted as an argument, it is difficult to say whether the interpretation is correct. The frames and functions of visual arguments are still vague. Alcolea-Banegas insists that they are those "arguments in which the propositions and their argumentative function are expressed visually" (Alcolea-Banegas, 2009, p. 261). Groake specifies a visual argument as "an argument conveyed by (non-verbal) visual means." He continues: "One can find visual arguments that contain no verbal elements, but most combine the visual and the verbal. In some cases, a visual argument makes the same claims both visually and verbally, reinforcing the verbal with the visual (or the visual with the verbal). More frequently, the visual and the verbal contribute different elements that combine to create an argument" (Groarke, 2003, p. I).

There are many other definitions, and all of them appraise visuality as the distinguishing feature. At the same time, they often diverge in arguments essence understanding. Some approaches speak of arguments in a static manner (argumentative schemes) while others draw attention to their dynamic core (the process of argumentation). Some solutions identify normative frames (mostly logical) whereas some others introduce the problem descriptively (rhetorical). The borders between two distinctions are somewhat vague, but they specify the core of visual arguments that puts them in a row with other styles of argumentation. Which approach is more promising in our case?

The first dichotomy appeals to static and dynamical ways of reasoning interpretation. Indeed, it can be considered as a particular structure or a procedure. However, dynamical solutions come closer to the idea of dialogs, and it is essential for argumentation. Nevertheless, despite the differences, both approaches are various sides of the same coin. Both of them work within the field of argumentation, acknowledge

the role of pragmatics and stress tight connections between arguers and listeners. The most important aspect is that they both refer to argument *schemata*, i.e., premises and conclusions relation that specifies the ways of how a proponent communicates with her opponents. This distinction emphasizes the crucial part of any reasoning: it should be seen as a *sequential activity* that follows premises and conclusion frames. If we see it in a picture, the latter can be called an argument. However, the easiest way to observe schemata is provided with a normative approach that solves the normative *versus* descriptive opposition. Since “arguments are ‘claim-reason complexes’” (Hitchcock, 2007) and “the methodological focus of argument identification ... must include a search for reasons” (Godden, 2013, p. 6), the work within the normative approach seems to be more productive. There are several ways in which pictorial normativity can be treated (Blair, 2015, Aberdein, 2017), but it will presume rational or logical analysis. The logic simplifies arguments evaluations as it provides precise methods for it.

The normative dynamical approach gives a fruitful perspective for visual arguments studies as visual information can be the point of logical (Hammer, 1995) or mathematical (Cellucci, 2019) interests. Some logical conceptions diagrammatize inferences, e.g., Venn or Peirce's theories. Let me cite Peirce's Existential Graphs system<sup>1</sup> as an example. It is less known than Venn's ideas, but this theory suits us better as it clarifies what a visual argument is. Basic units of this conception are diagrams (Figure 1) that can be roughly correlated with propositions. Peirce calls his diagrams (Figure 1) as “moving pictures of thoughts”. They move<sup>2</sup> towards the conclusion (see modus ponens transformations as an example), and such movements introduce argumentation as a specific process of information exchange, in which premises are logically related to their conclusions.

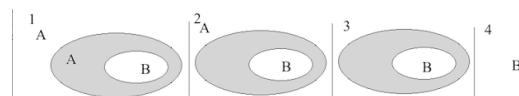


Figure 1 – Peirce's diagrams (modus ponens transformation:  
“If A then B (two ovals). A. Consequently, B”).

It seems that strict visual deductions discover the essence of reasoning, and this essence is worth being allied to visual arguments. When we look at a picture, these sequential relations have to be

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<sup>1</sup> I will not draw correlations between Peirce's and algebraic logical theories. It is worth mentioning the papers for those who might be interested in this conception: Roberts (1973) and Zeman (1964) offer formal introductions whereas Champagne and Pietarinen (2019) provide an informal representation.

<sup>2</sup> The term “movement is not just about physical transportation.

observable. The conclusion has to be “made explicit, by gradually transforming the starting layout” (Champagne & Pietarinen, 2019, p. 26). Once it is done, “the visual argument risks begging the question” (Champagne & Pietarinen, 2019, p. 26).

To sum up, visual arguments are arguments if they demonstrate certain schemata. However, it does not mean that they are not specific. To see their peculiarity, we need another Peirce’s idea.

### 3. ICONICITY

Visual and verbal arguments have similar schemata, but its transparency is different. Verbal arguments mostly demonstrate premise and conclusion procedures brighter than pictorial arguments do. Meanwhile, sometimes pictorial arguments are confident and even more persuasive than verbal. The term “persuasive” should not mislead as this paper develops a normative, which means mostly logical<sup>3</sup>, rather than rhetorical, approach. In Peircean terms, we would say that different arguments have various levels and styles of iconicity<sup>4</sup>. Iconicity refers to semiotics (the study of signs and sign processes) with its most famous signs trichotomy: icons, index, and symbols. We live in a world of signs, and each sign can be scrutinized in terms of this trichotomy. Icons match signs with real conditions fixing resemblances with their objects; indexes are caused by their objects while symbols have no precise coincidence and have to be culturally learned.

It might come to mind that icons refer to visual arguments, and iconicity is a distinguishing feature of visual argumentation. However, it would be a rash decision as ‘iconic’ does not mean ‘visual’. It is our habit to associate both words since we got used to perceiving the world visually. In the case of reasoning, iconicity is responsible for structure-preserving mappings, which means that we see an argument when we presume the premise and conclusion consequence. Logical schemata are always presented in an iconic way, but this way is not unique. There are several types of icons that are images, diagrams, or metaphors. If images presume precise resemblance, diagrams point to structural similarity whereas the resemblance in metaphors, the most distant from their object type, is getting more conditional (for details see CP 2.278-2.282). Any arguments are given iconically, but images are more iconic than logical diagrams, diagrams are more iconic than “the algebras, and the algebras are more iconic than linguistic expressions (see MS 1147, 1901)” (Pietarinen & Bellucci, 2017, p. 188).

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<sup>3</sup> Logic it treated in both formal and informal ways.

<sup>4</sup> Stjernfelt (2011) scrutinizes this fact from the perspective of philosophy.

Iconicity let us see the common basis of all arguments. At the same time, it explains the peculiarities of pictorial argumentation. Pictures per se are icons that are modeled most closely on their objects (images). That is why they are read comfortable and fast. Visibility simplifies interpretation and objections construction as it represents the whole situation at once. At the same time, it works well only if a picture is correctly understood, *viz.* iconically designated content follows reasoning schemata that are also given in an iconic way. Otherwise, problems appear. For instance, two persons can treat the same image in opposite manners or miss the idea of argument at all. A picture works as an argument if the concept of drawing conclusions through the use of reasons is presented. There are two opportunities for how it could be done.

The first road deals with reasoning observation, *i.e.*, we see how premises are turned into the conclusion. The process can be fixed within one image (Figure 2, the 1<sup>st</sup> image<sup>5</sup>), or one picture can substitute the other one until the final result is reached. This procedure reminds commercials without words (Figure 2, the 2<sup>d</sup> image<sup>6</sup>). Besides, we can play with iconicity types. Figure 2 (the last pair) demonstrates how an image is diagrammatized (the transition from an image to a diagram). These movements turn a picture into an argument.



Figure 2 – Iconical games

The second way of schemata introduction is indirect. It relies on the fact that the majority of visual arguments are needed to be verbally specified. Verbal elements facilitate the right form of conclusion identification or, in other words, they identify the rule of how an image has to be moved and, as a consequence, read. Technically, such arguments behave like “joint arguments” (Roque, 2012, p. 283). The size of the verbal part depends on the situation. I would say that the relationship between visual and verbal components is inverse: fewer pictorial details, more words. For example, visual reasoning is unreliable for situations in

<sup>5</sup> The picture is borrowed from the Map Hause project (<https://flint-culture.com/war-map-new-exhibition-book-showcase-rare-20th-century-pictorial-conflict-maps/>).

<sup>6</sup> The pictures are borrowed from Groake (2017).

which limits are involved. If accurate information is needed, a picture will be fulfilled with a large text or even substituted with it.

To conclude, *pictures are arguments if they represent thoughts movements in the most iconic way that could match signs with real conditions by association and likeness*. This definition specifies why visual arguments should be estimated in a normative way.

#### 4. EVALUATIVE CRITERIA OF VISUAL ARGUMENTS

Do we need new evaluative criteria for visual reasoning or one? Both alternatives are possible, but the second one looks more attractive. For instance, Gilbert proposes four argumentative modes: logical, emotional, visceral (physical) and kisceral (intuitive) (Gilbert, 1997, p. 75), when "each of the modes can define, for itself, relevance, sufficiency and acceptability" (Gilbert, 1997, p. 97). However, it is not clear how these modes are measured. At the same time, existed normative theories with its limited but well-developed and well-working methods get work done. It seems that Godden (2013, 2017) is right, and visual arguments do not require any revision. Any known approach, such as counterexample, arguments schemes and critical questions, ARS (acceptability, relevance and sufficiency) or ARG (acceptability, relevance and good grounds) and even fallacies method can be used. In fact, if visual argumentation is a part of the whole argumentation, its usual methods should be applied.

Groarke has provided general frames for the evaluation of visual arguments. He states them as follows:

Once we have identified the structure of simple and extended visual arguments we can assess them by applying well-established theories of argument developed by logicians, rhetoricians and pragma-dialecticians. Among other things, these theories raise the questions:

1. whether a visual argument's premises are acceptable;
2. whether a visual argument's conclusion follows, deductively or inductively, from its premises;
3. whether a visual argument is appropriate or effective in the context of a particular audience or a particular kind of dialogue; and
4. whether a visual argument contains a fallacy or conforms to some standard pattern of reasoning (argument by analogy, straw man reasoning, modus ponens, and so on). (Groarke, 1996, p. 114)

These frames demand specifications, and below I will single out two solutions, namely Dove and Lake & Pickering's approaches, as examples.

Dove (2013, 2016) justifies argumentation schemes method to the needs of visuality (there is also a paper of Dove and Guarini, 2011). He argues that some subset of argumentation schemes could be of use in assessing visual arguments: "Schemes for patterns such as argument from analogy, argument from sign, argument from perception, or the various abductive schemes would also seem to be applicable with minimal modification to a variety of visual arguments" (Dove, 2016, p. 261). For example, visual analogies vividly match several situations, which is entirely predictable since analogy perfectly works with iconic representations. Dove notes that "the application of these schemes will always leave skeptics of visual argumentation with the suspicion that visual argument is simply parasitic upon verbal argumentation" (Dove, 2016, p. 261), but I think it is not the point. Reasoning structure does not belong to the level of words. It is captured iconically, and if a picture does this job, it starts representing an argument.

Lake and Pickering (1998) concentrate on procedures that presume refutations. They propose three methods, in which pictures "can refute and be refuted in a mixed-media environment." These are normative but quite informally introduced as follows:

- (1) dissection, in which an image is broken down discursively;
- (2) substitution, in which one image is replaced within a larger visual frame by a different image;
- (3) transformation, in which an image is recontextualized in a new visual frame. (Lake and Pickering, 1998, p. 79)

The scholars agree that their procedures are not the only strategies of visual refutation, but they propose an idea that can cooperate with Dove's approach.

Despite the differences, both conceptions pay attention to visuality and meet the requirements of normativity in arguments evaluation. They complement each other as they accentuate various sides of arguments analysis. If Dove's position can be identified as static (it is keen on argumentation schemes), Lake and Pickering's proposal regulates evaluative procedures dynamically (the dichotomy from the 1<sup>st</sup> section). In the next section, I will demonstrate how these approaches can be combined and effectively used as a criterion for patterns of dissents predictions.

## 5. EXAMPLE

The section analyzes the debates on the tallest building in Warsaw destroying. This building is the Palace of Culture and Science (the left image of Figure 3) that was built like a soviet gift and turned into political

games after the collapse of the Soviet block. The question under discussion is as follows: is the building needed to be saved or destroyed? Although today the polemic is almost gone, this story provides an excellent instance of visual refutation. Besides, this example is quite famous in argumentative society as it has been analyzed at several conferences (ISSA, ECA, etc.). Today I will not scrutiny debates in general (political and ethical parts are left aside), but show how verbal argumentation can be visually declined.

Let me start with a passage from a polish newspaper. Argumentation is mostly verbal (the article is supplied with the only image of the palace), but I will use visual means for critics. Once we open a web-page, we read the following:

A lot of people would like to completely erase socialist realist architecture from the cityscape," says Zawadzki, the architect. This includes some middle-aged adults and seniors who lived through the Soviet oppression who yearn to see the entire socialist realist style of the city replaced and Warsaw returned to a more traditionally Polish aesthetic.

Like other socialist realist architecture spread across the former Soviet bloc, its mandate was to be "socialist in content, national in form," pairing realistic imagery with grand scale to control the public consciousness and help forge a new social order. In other words, it was designed to be an actual mechanism of tyranny. Some [people] have described it as ugly. But others believe it is now an integral part of the city even if it is not attractive to look at. (<https://nextcity.org/features/view/the-movement-to-destroy-warsaws-tallest-building>)

The passage argues against the building retention, and its arguments can be summarized as follows: (1) the building is an example of socialist realist architecture, which means (2) that it was designed to be an actual mechanism of tyranny; finally (3), it is not attractive but ugly.

To start critics, it is worth appealing to Dove's scheme from analogy and adding different similar pictures to the original photo (Figure 3). This step makes the resemblance visible.



Figure 3 – The row of similar buildings

If the pictures are similar, the initial image can be replaced by the other painting. This move reminds Lake and Pickering's procedure of transformation, in which an image is recontextualized. Let me substitute the left (original) photo with the picture from the right (Figure 3). The transformation automatically generates a counterexample that we need (Figure 4). Instead of socialist realist architecture, we have Art Deco style that ruins the first argument and questions the rest of them. The Art Deco style building can hardly be a mechanism of socialistic tyranny. It can scarcely be called 'ugly' as it is the Empire State Building in New York that was designated a National Historic Landmark in 1986 and was ranked number one on the American Institute of Architects' List of America's Favorite Architecture in 2007. Someone might say that such visuality does not provide a consistent refutation, but it, at least, undermines the confidence, which is also important.

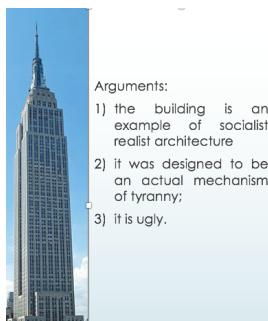


Figure 4 – Substitution and arguments

For those who are not convinced, the same resemblance can be presented dynamically (as a cartoon). We take the previous row of pictures (the first line in Figure 5), retract the color (the second line in Figure 5), and diagrammatize the images (the third line).



Figure 5 – Games with iconicity 2

We play with various types of icons and move from images toward diagrams. These movements clarify the analogy schemata as they make the resemblance quite obvious.

## 6. CONCLUSION

I am far from thinking that the paper makes a step towards a theory of visual argument (Birdsell & Groarke, 2007), but I guess that it clarifies three positions. First, visual arguments are arguments, but not every picture is an argument. To be recognized as such, it has to be correlated in our heads with premises and conclusions relations. It is possible if an image moves per se or is supplied with verbal elements that specify the way of transformations. Such transformations are not about the propositional nature of pictures. On the contrary, they argue for “an acknowledgment of the multimodal nature of communication in which argumentation as a social and rational activity finds its place” (Tseronis, 2013). Second, as visual arguments are arguments, they can be reconstructed, evaluated, and even abandoned if it is needed. To see that, we can use any normative conception of arguments analysis since “the cogency of the argument does not depend on what language it is stated in, just as it does not depend on whether the argument is heard, let alone understood. Rather, the cogency of an argument is a function of how well its reasons support its claim” (Godden, 2013, 2017). Third, visual

argumentation is special, and the idea of signs and objects resemblance confirms it. Visual arguments can play with various icons, and this peculiarity is fruitful in cases of reasons to dissent investigations (see the example from the fifth section).

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