

# Visual Argument Schemes in the PTA

LEO GROARKE  
*Trent University*  
*leogroarke@trentu.ca*

This essay begins with examples of dissent associated with photographs of the migrant crisis in Europe. It shows how appeals to these photos can be analysed and discusses the broader question how instances of visual argument can be evaluated. Its account of assessment focuses on the application of argument schemes to visual arguments, ending with a discussion of Wagemans' Periodic Table of Arguments (the PTA) and the ways in which it can be extended to accommodate visual (and multimodal) argument.

KEYWORDS: visual argument, argument schemes, the Periodic Table of Arguments, key component tables, Wagemans, multimodal argument

## 1. INTRODUCTION

This essay addresses argumentation research in two intersecting areas of interest. One is the study of visual arguments: arguments which incorporate non-verbal elements like pictures, photographs, drawings, visual art, cartoons, and virtual reality. The second area of interest is the study of argumentation schemes: patterns of argument that can be used to analyse and assess real life instances of arguing. I hope to show how various accounts of schemes can be utilized in attempts to understand and assess visual arguments that incorporate "reasons to dissent."

## 2. VISUAL ARGUMENTATION AND DISSENT

I want to begin by noting that visual argumentation sometimes plays an important role in instances of dissent that occur within scientific discussion and debate.

A good example is associated with the ongoing controversy over the question whether the ivory billed Woodpecker is extinct in North America. Figure 1 compares stills taken from a video of a reported sighting of the ivory bill to illustrations depicting its colouring and that of a species it is often confused with, the pileated woodpecker.

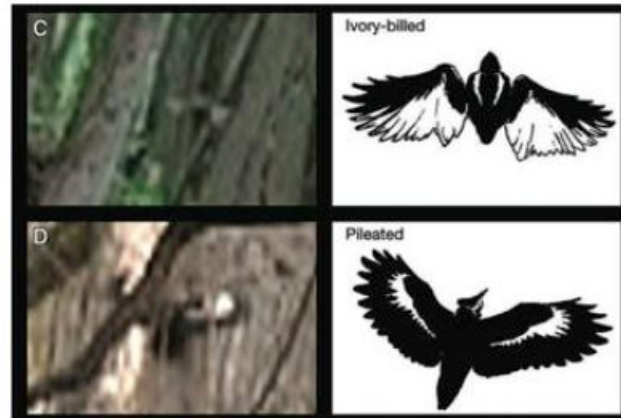


Figure 1 – The Ivory Billed Woodpecker (Dove 2011, p. 8)

The visual argumentation used in the ivory bill controversy is discussed in Dove 2011 and 2012. He describes the context of the debate as follows.

It [the Ivory-Billed Woodpecker] is (or was) a very large bird: almost two feet from tip of beak to tip of tail and a wingspan of two and a half feet. Sadly, the last scientifically confirmed sighting of the bird occurred in 1944. It is, unfortunately, probably extinct. Yet, from 1944 to today, a steady stream of unconfirmed sightings has stoked the hopes of bird watchers that maybe, just maybe, this bird has escaped extinction. In 2005 in the journal *Science*, those hopes were buoyed by the title of an article, "Ivory-billed Woodpecker (*Campephilus principalis*) Persists in Continental North America." In the article, ... ornithologists detailed a possible sighting of the bird in Arkansas. This sighting included a short video that was included in the online material for the article. The argument for the continued existence of the IBWO depended, at least in part, on distinguishing the videotaped bird from the visually most similar, and also incredibly common, pileated woodpecker.... (Dove 2012, p. 235)

I leave a discussion of the ivory billed controversy for elsewhere. In the current context it is enough to note that visual evidence which contradicts established scientific theories often initiates dissent, and that this dissent has a long history – in theorizing about the solar system, botany, geology, biology, and other fields.

To keep the scope of this essay manageable I will leave scientific dissent for discussion elsewhere and focus my discussion on an example of political dissent. The photo in figure 2 was taken by the Turkish

journalist, Nilüfer Demir. It is a photograph of Aylan Kurdi, a drowned three-year-old Syrian boy found dead on a Turkish beach near Bodrum. In just 12 hours it was spread to 20 million screens around the world (University of Sheffield 2015) and provoked an international outcry that condemned the European immigration policies that fuelled dangerous migrant attempts to flee Syria across the Mediterranean Sea.



Figure 2 – Photograph of Aylan Kurdi, *Wikipedia*

In argumentation literature, the significance of the Kurdi photograph has been discussed by Kjeldsen 2017. In this paper I want to note that it functioned as a premise in many visual arguments that addressed the migrant crisis in Europe – arguments that used it as a visceral way to capture what the crisis means in human terms, something that is difficult to convey in words.

The photo of the dead 3-year-old Syrian boy on a Turkish beach is haunting. It captures everything we don't want to see when we tap our phones or open our newspapers: a vicious civil war, a refugee crisis, the death of an innocent... 'It is a very painful picture to view,' said Peter Bouckaert, who as director of emergencies at Human Rights Watch has witnessed his fair share of painful scenes. 'It had me in tears when it first showed up on my mobile phone. I had to think hard whether to share this.' But share, he did. Bouckaert... said people need to be pushed to view 'the ghastly spectacle'... (Lush 2015)

Around the world, the Kurdi photograph was used as evidence in arguments that condemned the migrant crisis and its causes. Figure 3 contains a KC (Key Component) table and a diagram that outlines the

form of many argumentative appeals to the photograph. A more robust, extended variant of the argument is outlined in figure 4. In this case, the argument explicitly contends that the Kurdi photograph exemplifies the (ghastly) reality of the migrant crisis and recommends specific action as a way to deal with it.

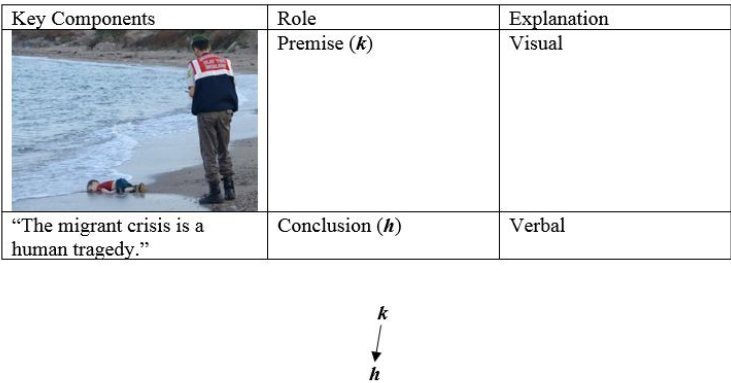


Figure 3 – A Simple argument

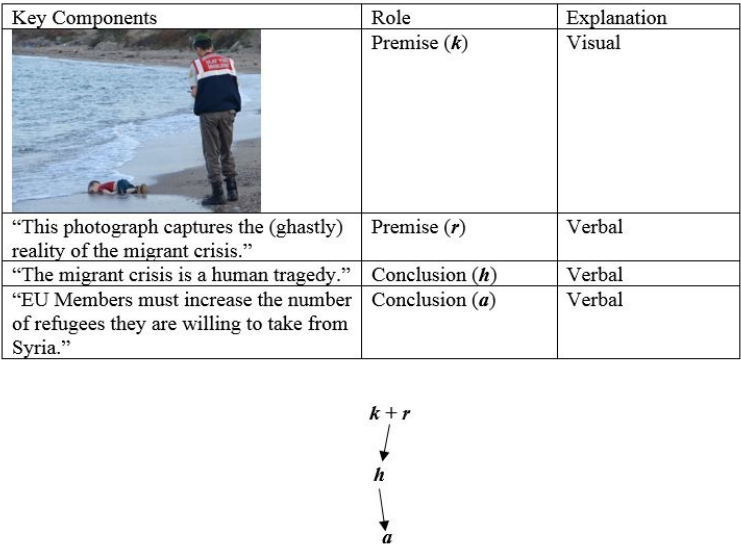


Figure 4 – An Extended argument

In the public debate that followed the publication of the Kurdi photograph, many arguments added other visual and verbal premises. The photographs in figures 5-7 are taken from a CNN photo essay entitled “Europe’s Migration Crisis in 25 Photos” (CNN 2015). It includes the Kurdi photograph but combines it with 24 other photographs that illustrate different aspects of the migrant crisis, ending with an account



Figure 5 – “migrants try to ... cross into Macedonia” (CNN 2015)

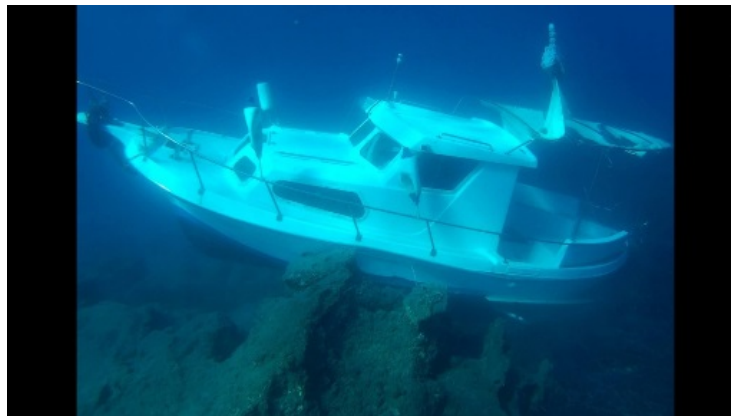


Figure 6 – “...a sunken 20 foot boat... off... Samos” (CNN 2015)



Figure 7 – “Refugees and migrants ...at Lesbos” (CNN 2015)

of “Ways to help [alleviate] the migrant crisis.” It is plausibly interpreted as an argument for this conclusion. It is too complex to be captured in a simple diagram, but its general structure is reflected in the subargument outlined in the KC table and diagram in Figure 8.

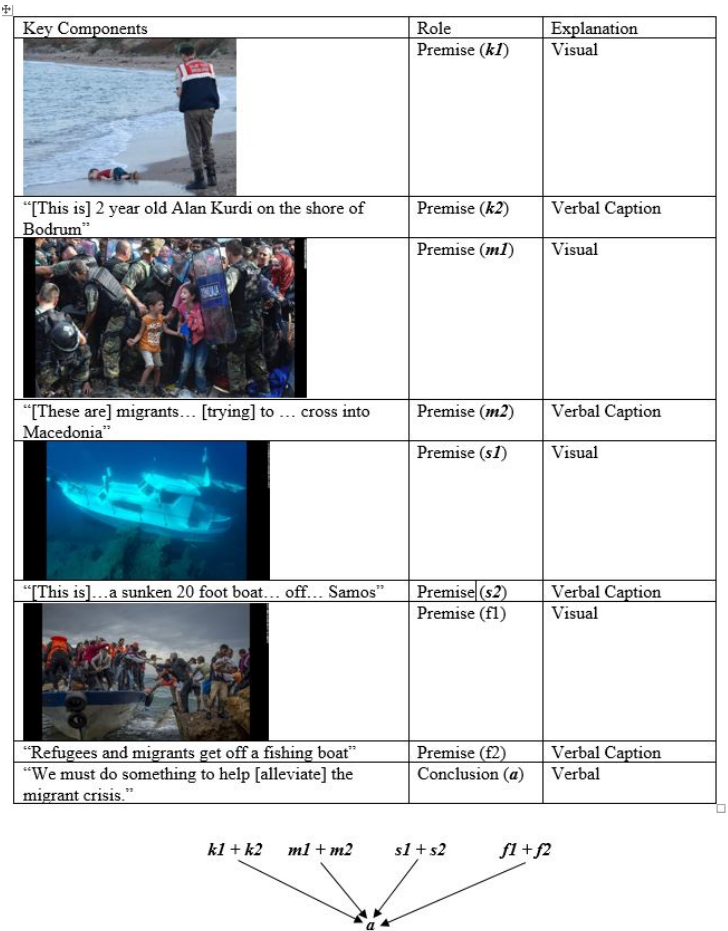


Figure 8 – Argument from the photo essay

These examples constitute a small handful of the many visual arguments provoked by the Kurdi photograph. The arguments fuelled a profound increase in interest in the Syrian crisis, convincing many that immediate action was needed to end the crisis. Among other things, this was manifest in growing contributions to the charities attempting to alleviate the crisis (Cole 2017). In this essay such arguments provide a good example of dissent provoked by visual arguing.



### 3. ASSESSING VISUAL ARGUMENTS

The use of visuals in argumentation that supports dissent raises the question how such arguments should be analysed and assessed. I have already shown how KC tables and standard argument diagrams can be used to analyse the structure of visual arguments. Once analysed, such arguments can, like purely verbal arguments, be assessed by asking whether they have acceptable premises that provide strong evidence in support of their proposed conclusions (in the latter case, this amounts to the question whether they are “valid” in a broad sense that recognizes deductive and non-deductive, and formal and informal, inferences).

In the case of the Kurdi examples already outlined, this raises the question (i) whether the photographs used in such arguments are genuine in the sense that they accurately present the incidents they are said to record (and not “doctored,” as photographs sometimes are); and (ii) whether they provide strong evidence for the conclusion that the migrant crisis is a human tragedy. I will not pursue a detailed discussion of these arguments here, but it can plausibly be said that they pass both these tests (and that the argument outlined in figure 8 is stronger than that outlined in figures 2 and 3, because it provides more visual evidence for the conclusion it proposes). For other visual examples which are analysed and assessed in this way, see Groarke & Tindale 2013.

In the case of visual arguments, we can, as in the case of verbal arguments, distinguish between kinds of argument. We can assess then assess instances of these different kinds of arguing by applying argument schemes that define normative criteria which apply to specific forms of reasoning (appeal to authority, causal reasoning, arguments by analogy, etc.). An argument scheme is a pattern of argument which can be defined by outlining its premises and conclusion in a generic way. Different instances of the scheme can be understood as particular instantiations of the general formula that results.

In this paper I will illustrate the standard approach to schemes with one example: slippery slope argument. It can be defined as arguing of the form outlined in figure 9. Individual cases of slippery slope reasoning correspond to different interpretations of  $X \dots X_n$ . Following Walton, Reed, & Macagno (2008), the most common approach to schemes pairs individual schemes with a set of “critical questions” which determine whether an instance of a scheme is a good/strong argument. In the case of the slippery slope scheme, we can define the critical questions as I have in figure 9.

As Dove 2016 and Groarke 2019 point out, many visual arguments can be understood as instances of standard schemes of argument. To illustrate this point, I’ve included two visual instances of slippery slope argument as figures 10 and 11. Figure 10 is a famous

World War II cartoon by Low which criticizes the British public for ignoring Germany's incursion into Czechoslovakia (X), suggesting that this will bring about the fall of Czechoslovakia (X1); which will destabilize

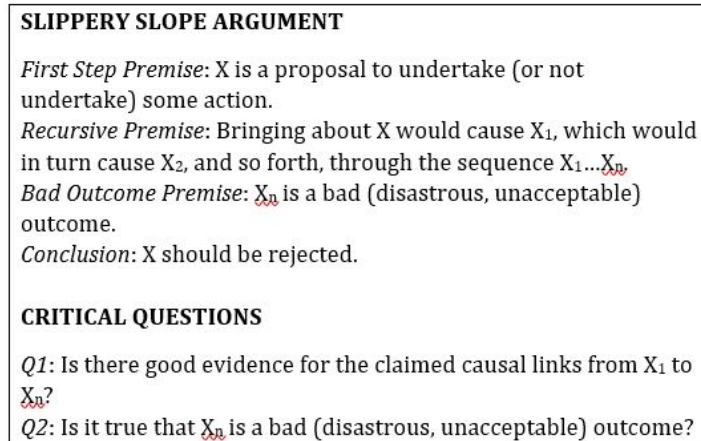


Figure 9 – Slippery slope scheme

Romania and Poland (X2); which will lead to the fall of the French alliances (X3); which will destabilize Anglo-French security (X4); which will have disastrous consequences for British citizen (X5). All the components of a slippery slope argument are there, but they are conveyed visually (via a visual metaphor). The cartoonist concludes that the British should reject their current failure to take an interest in Germany's interference in Czechoslovakia (X).



Figure 10 – Low cartoon (Groarke & Tindale 2013, p. 278)



Another visual instance of slippery slope is included as figure 11. “The Devil’s Toboggan Ride” is an 1887 temperance poster decrying those who allow boys to slide down the slippery slope that leads from Cyder in a hotel or drugstore to Beer in a saloon with doggery to Wine in gambling hell, to Whisky (and corruption), and – ultimately – to a drunkard’s grave. Like our first visual example of slippery slope, this one can be judged by asking the two questions associated with the Slippery Slope scheme (Q1 and Q2).

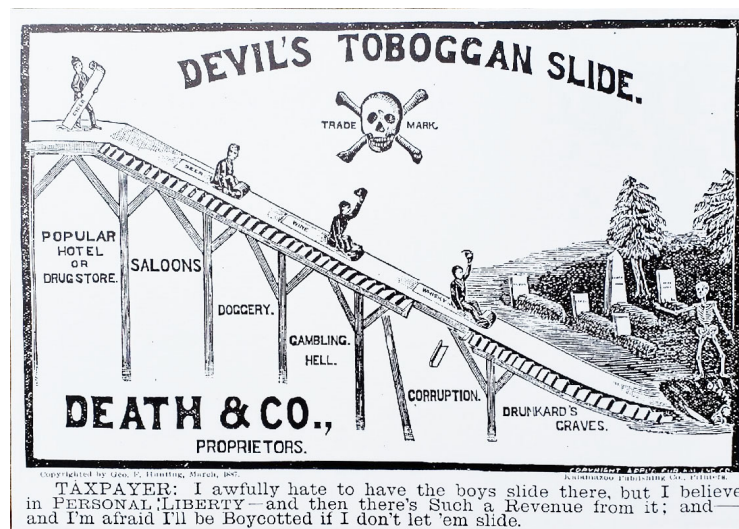


Figure 11 – Temperance poster (Redditt Propaganda Posters)

Scholarship on the application of argumentation schemes to visual arguments is in its early stages, but it can already be said that many visual arguments are instances of argument by analogy, argument by sign, and other common schemes. The arguments about the migrant crisis which I noted at the outset of this essay can be characterized as instances of the ad misericordiam schemes outlined in Walton 1997 – most notably, notably, a scheme he calls “need for help.” They can also be construed as instances of a visual scheme that Groarke & Tindale 2013 call “visual demonstration” (or “argument by showing”). In the latter case, an argument supports some claim by visually demonstrating that it is true or plausible. Other accounts of visual schemes which are of interest include Dove 2016, which outlines an “argument from fit” scheme which is intrinsically visual, and Groarke 2019, which expands on Dove’s discussion, suggesting that argument from fit is one of a family of similar schemes). Elsewhere, Groarke 2017 proposes “argument by allusion” as an important scheme in political cartooning.

More work needs to be done on the application of the scheme approach. In the remainder of this essay I will try to contribute to this

goal by considering what might be said of Wagemans' Periodic Table of Arguments and its relationship to visual arguments.

#### 4. WAGEMANS' TABLE

Wagemans 2018 provides a good introduction to the Periodic Table of Arguments (the PTA). More scholarship will have to determine whether it is an approach to schemes which is preferable to the standard catalogues of schemes – and, more fundamentally and more importantly, the nature of its relationship to these catalogues. At this point in the discussion it can be said that the PTA addresses some significant issues raised by the standard approach.

Some of the issues raised by the standard catalogues stem from the number of schemes that they contain. It is not difficult to define hundreds – in principle, thousands – of argument schemes. The result is an embarrassment of riches that is challenging to learn, teach and apply. The standard catalogues are, moreover, a hodgepodge of different schemes which is more a *list* than a *system*. In many cases the same scheme can be defined in many different ways; the relationship between different and sometimes overlapping schemes is not entirely clear; and there is no precise theoretical rationale that explains the typology of arguments the catalogues contain. When we analyse instances of real life arguing, there is no method that invariably produces consistent answers to the question how a particular argument should be categorized. In many cases, different answers are possible.

In contrast, the PTA provides (i) a methodology that clearly determines what scheme an argument is an instance of; (ii) a precise definition of specific schemes that clarifies the ways in which different schemes relate to one another; and (iii) a typology of schemes that is a coherent system founded on an understanding of some key elements of argument. These strengths being noted, the Wagemans approach has some challenges of its own. While the standard approach to schemes is not tied together by a clear, elegant theory, it is intuitive and easy to apply, defining arguments in ways that are clear to real life arguers who know nothing about argumentation theory. Such arguers already know what causes and effects (and slippery slopes), analogies, allusions, etc. are, and this makes it relatively easy for them to understand standard schemes and apply the appropriate schemata.

Wagemans' table is less easily applied. Someone using it must reduce whatever argument they are addressing to either a two sentence argument (with one premise and one conclusion, and a warrant or "lever") or, in many cases, a series of two sentence arguments that can be analysed according to a theoretical apparatus which is founded on an account of subjects, predicates, a distinction between first and second

order arguments, and an understanding of the difference between facts, values and policies. For ease of reference, I will call the collection of issues that this raises the “bridge” problem insofar as the successful application of Wagemans scheme depends upon a bridge that takes us from his table to arguments as they really occur in real life argument. The problem is reflected in Wagemans’ own analyses of real life examples, which often involves a detailed analysis of a real life argument from which he *extracts* an argument which is then analysed. The extraction provides a bridge between his theory and this particular case of arguing.

It is too early to answer the question whether the PTA or the standard catalogue of argument schemes provides a better (or equally successful) theoretical account of schemes. In the final analysis, an answer to this question will have to establish which of them does a better job highlighting the aspects of argument that need to be identified, isolated and examined in deciding whether real life arguments are weak or strong. Here I can only say that this is a question which merits more attention, and that the attempt to answer it is likely to shed light on the nature of argument schemes and the real life arguing they are used to analyse.

## 5. BRIDGING TO THE VISUAL

I cannot develop a detailed analysis of the Wagemans approach here, but I will address the bridge problem in a way that engages visual arguments and the issues that are the focus of this paper. This aspect of the bridge challenge can be understood in light of Hinton 2019, who makes the following remarks on the PTA.

The genius of the system devised by Wagemans consists in his taking an element of the linguistic structure of the argument premises as the fundamental difference between argument forms... By concentrating on linguistic and pragmatic elements of arguments, Wagemans has created a neater and more elegant categorization of argument forms than has previously been available, providing a tool of great value to scholars across the field of argumentation. (p. 97)

This way of putting the matter emphasizes language and linguistic structure, i.e. words. If this is, as Hinton suggests, an essential component of the PTA approach it raises the question how or whether the PTA can be applied to cases of arguments in which it is not just words that play a major role. This includes, not only visual arguments, but auditory arguments (see Groarke 2019) and many other kinds of multimodal argument (see Tseronis & Forceville 2017). If the PTA cannot be applied in these cases, it has a serious shortcoming so long as it is intended as a

set of argument schemes that can analyse real life arguing in a comprehensive way, for this would mean that it is unable to account for a large and (in light of digital technology that makes multimodal communication more and more common) growing realm of argument that rely on non-verbal modes of arguing.


Consider one of Wagemans own examples – so far as I know, the only one which incorporates a visual. It is an example of a first order predicate argument which supports a fact with a fact (an instance of the scheme 1 PreFF, in the  $\alpha$  quadrant of the PTA). I have reproduced the argument and the way it is presented in figure 12. In the current context, it is important to note that it is *not* presented as a visual argument and is more accurately described as a verbal argument which is accompanied by a visual (a photograph) that plays no role in the reasoning. For the proposed conclusion (that the subject was driving fast) is inferred, not from what we see in the photograph, but from the verbal statement that accompanies it (that the driver “left a long trace of rubber on the road”).

In a real life situation, this amalgam of a verbal argument and a photograph is by interpreting it as an extended argument which incorporates not one, but two, arguments. The first is the verbal argument included in the quotation marks. The second is a visual argument which backs the premise of the verbal argument with visual evidence that supports it (by showing the skid mark in question). Considered from this point of view, the structure of this extended argument is outlined in the KC table and the diagram in figure 13.

“The suspect was driving fast, because he left a long trace of rubber on the road.”



Figure 12 – Example from Wagemans 2018

Key Components	Role	Explanation
"The suspect was driving fast."	Main Conclusion ( <i>f</i> )	Verbal
"[H]e left a long trace of rubber on the road."	Premise/Subconclusion ( <i>l</i> )	Verbal
	Premise for Subconclusion ( <i>p</i> )	Visual (photograph of the skid left by the suspect)

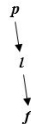




Figure 13 – The Skid argument outlined

It is worth noting that the argument outlined in figure 13 is the kind of argument one would expect to find in a contentious debate over the question whether the suspect in question was driving fast. In such a context – in a courtroom, for example – the verbal *claim* that he left a long skid mark on the road carries little weight and provides relatively weak evidence for the proposed conclusion. One way to strengthen such a claim by providing by visual evidence that supports it (by building a visual argument). Considered from this point of view, the visual premise *p* plays a key role in the proposed argument. In real life, the argument may go directly from *p* to the main conclusion, as when a police officer points to the photograph and says, “We know the suspect was driving very fast because *this* is what we found at the scene of the crash.”

Arguing about the skid invokes a visual argument when the inference to a conclusion is founded on what we *see* when we look at the skid marks in the photograph. Consider, as another example, the following three part testimony by a prospective expert on skid marks and their interpretation.

1. [The expert points to a photograph and says:] “This is the kind of skid mark left when one attempts to stop when one is driving fast.”
2. [They then point to the photograph we have already noted and say:] “The skid mark on the right is the one made by the suspect.”
3. [They then declare:] “We can conclude that the suspect was driving fast.”

I have outlined one version of this argument in Figure 14. In this case, the inference to the first conclusion (*s*) is founded on a comparison of what we see when we look at the first photograph (*p1*) and what we see when we look at the second one (*p2*) (which is taken to be indicative of the kind of skid made by someone driving fast).

Key Components	Role	Explanation
	Premise ( <i>p1</i> )	Visual (photograph showing the suspect's skid mark on the right)
	Premise ( <i>p2</i> )	Visual (photograph of the kind of skid mark made by a car that is moving fast)
"The skid mark at the scene is the kind of skid mark made by a fast moving car."	Subconclusion ( <i>s</i> )	Verbal
The subject was driving fast.	Main Conclusion ( <i>f</i> )	Verbal

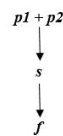


Figure 14 – Second skid argument

What do examples like this (and the Kurdi examples I began with) tells us about the application of the Periodic Table's system of argument schemes to visual arguments? I cannot answer this question in a detailed way here, but I will further the discussion by proposing two hypotheses which can be defined as follows.

1. *The Irreducibility Hypothesis*: The schemes in the PTA cannot be applied to visual arguments so long as one insists on a model of argument that assumes that they are wholly explainable in linguistic terms.
2. *The Extension Hypothesis*: The schemes in the PTA can be applied to visual arguments if one "extends" its understanding of subjects and predicates in a way that allows non-verbal instances of seeing to be key elements of subjects and predicates in premises and conclusions.

The irreducibility hypothesis suggests that one cannot apply the schemes in the PTA to visual arguments by reproducing the latter in a way that is completely verbal. Because the acts of (non-verbal) seeing they depend on are not reducible to words. Fundamentally, this is because seeing something is intrinsically distinct from reading (or hearing) about it, and the attempt to translate the former into the latter is inherently problematic (because it is difficult to choose between the many different ways in which we can describe a visual, and because most visuals contain far more information than one can convey in a feasible description). In the case of the argument outlined in figure 14, for example, it is our



looking at the skid marks, not reading a description of them, which is the basis of the key inference.

This does not mean that the schemes in the Periodic Table of Arguments cannot have visual instances, but that such instances need to be visually identified and recognized. This can be done by extending the account of subjects and predicates that Wagemans proposes so that it includes subjects and predicates that are visually specified. This fits well with the use of visuals in arguing. In our first skid mark argument (figure 13), for example, the visual premise (*p*) functions as a way to say that the driver left the skid mark that we see in the photograph. This way of describing the situation does not eliminate the visual but rather directs us to it ostensibly, making it a key element of the predicate that is the basis of the conclusion that the driver left a long trace of rubber on the road. This provides a basis for the further (verbal) inference to the conclusion that they were driving fast.

In our second skid argument (Figure 14), it is what we see when we visually compare the two photographs of skid marks which is the basis of the inference that the skid is the kind of skid one makes when one is driving fast. In this case, the subject of the initial argument is visual – i.e. what we see in the first photograph, and the predicate contains a key visual element (claiming that the first skid mark is similar to the one we see in the second photograph).

Considered in this way, all the skid arguments we have considered are first order predicate arguments that belong to the alpha quadrant of the PTA, having predicates best understood as claims of fact. This makes them arguments of the form 1PreFF. One might usefully go further and indicate that these are cases in which the facts cited are visually defined (and that the arguments in question are in this way arguments with visual components). To distinguish between a fact that is defined with words only and one that is defined visually we might represent a fact as  $F(v)$ . Considered from this point of view, the visual examples I have discussed in this paper can be described as arguments that match the schemes 1PreF(v)F and 1PreF(v)F(v). One can describe the Kurdi examples I have used to illustrate the role of visual arguments in the migrant crisis in a similar way, as other examples of arguments that are instances of different PTA schemes (involving values and policies).

The question whether a reference to visual (and other multimodal components of argumentation) needs to be included within the labels used in the PTA warrants more discussion. If one takes the analogy to the Periodic Table of Elements very seriously, then it can be said that visuals and words are fundamentally different elements and should, in view of this, be distinguished. An alternative approach might leave the table as it is and indicate the differences between visual and verbal elements in an accompanying Key Component table – as I have

done in analysing examples in this paper. Whatever one does, an analysis of visual arguments will in some way need to indicate both their visual nature and specify their visual components.

## 6. CONCLUSION

In this essay I have tried to open up some issues that warrant more discussion, argument and examination. I began by recognizing the important role that visual argumentation plays in cases of dissent. I have illustrated this with examples which raise the broader question how we should analyse and assess instances of visual arguing. I have argued that this can be done in ways similar to the ways in which we analyse and assess instances of purely verbal arguing – by recognizing visual as well as verbal premises and conclusions, and by asking whether visual arguments contain acceptable premises that provide strong support for their conclusions. In analysing instances of particular kinds of arguments, I have noted that argument schemes can be used to judge specific kinds of visual argument but focused my attention on the alternative approach to schemes suggested by Wagemans’ Periodic Table of Arguments. I have – tentatively – concluded that it can be extended in a way that will provide a bridge between it and visual arguments, making it a classification scheme that can accommodate visual (and multimodal) arguments.

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