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Visual analogies and arguments

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ABSTRACT: I argue that a basic similarity analysis of analogical reasoning handles many apparent cases of visual analogy. I consider how the visual and verbal elements interact in analogical cases. Finally, I offer two analyses of visual elements. One analysis is evidential. The visual elements are evidence for their verbal counterparts. One is non-evidential: the visual elements link to verbal elements without providing evidence for those elements. The result is to make more room for the logical analysis of visual argumentation.

KEYWORDS: analogies, argument from analogy, seeing as, visual analogies, visual arguments

1. INTRODUCTION

There are many available analyses of arguments that appeal to analogies. Take a simple account of the proper analysis and evaluation of analogical reasoning – say any of the *comparative similarity accounts* one finds in numerous textbooks on critical thinking, informal logic, and argumentation. The basic idea is that one compares some elements, sometimes called the *base* and the *target*, across some domain. Then, appealing to the comparison, one projects or transfers some further property, broadly construed, from the base onto the target. The projective inference is judged better or worse as a function of the quality of the initial comparison, the truth or plausibility of the claim, etc. An advantage to this account is that it seems to cover a wide variety of analogical cases.

In this paper, I start (§2) by quickly sketching and applying a similarity account to several easy, non-visual examples. Next, (§3) I show that the simple account covers cases in which the analogy is visual rather than verbal. The application is straightforward. Some image, graph, diagram or what-have-you, serves as a visual comparison of a base and a target. The argument projects or transfers some property, feature or characteristic from base onto target. The same desiderata for non-visual cases apply to visual cases. How does it work? In the next section (§4), I argue that the visual analogies can operate analogously to visual evidence. I sketch a method by which the visual connects to or associates with verbal evidentially. Then I consider a non-evidential route from the visual to the verbal. The last section (§5) summarizes the paper.

2. A SIMPLE TREATMENT OF ARGUMENTS FROM ANALOGY

Take the schematic analysis of arguments from analogy given by Walton et al. (2008: 315). Such arguments contain two premises. First, there is a similarity premise in which two cases are compared as regards their general similarity. Next, a premise asserts that some property, broadly construed, obtains in one of the cases. The conclusion projects or

transfers that property onto the other case. The analysis of an argument from analogy, then, requires that one first identify the component parts of the argument; and then fit those components into required scheme. The evaluation of such arguments involves answering a series of critical questions.

[Generic Comparison] Scheme for Argument from Analogy
Similarity Premise: Generally, case C_1 is similar to case C_2 .
Base Premise: A is true (false) in C_1 .
Conclusion: A is true (false) in C_2 .

Critical Questions
CQ1: Are there differences between C_1 and C_2 that would tend to undermine the force of the similarity cited?
CQ2: Is A true (false) in C_1 .
CQ3: Is there some other case C_3 that is also similar to C_1 , but in which A is false (true)

Walton et al. (2008: 315) and Walton (2006: 96 f.)

The scheme compares cases as regards general similarity. Although Walton et al. don't offer a version in which the comparison is specified, it is easy enough to extend the scheme so that the similarity premise is spread through some set of specific comparisons.

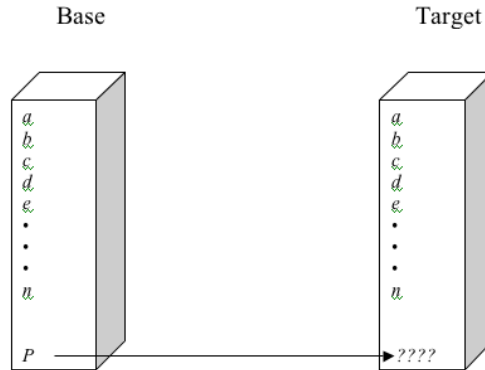


Fig. 1. A Visual Presentation of Argument from Analogy

This may accord with Guarini's (2004: 161) *core*.

Specific Comparison Scheme for Argument from Analogy
Similarity Premise: Case C_1 is similar to case C_2 as regards features f_{1-n} .
Base Premise: Case C_1 has feature f_{n+1} .
Conclusion: Case C_2 has feature f_{n+1} .

One can expand these schemes to include explicit claims regarding the relevance of the comparison. If such premises are added, then the list of critical questions will need to be expanded so that the relevance can be questioned explicitly as well. To apply the scheme to the following analogical argument, we first identify the cases, the kind of comparison, which case serves as base, and therefore which is targeted, and the feature that will be transferred from the base to the target.

Speeding is known to increase the likelihood of car collisions, and drivers are punished for this dangerous behavior whether or not their particular sprees cause collisions. Violent pornography, like speeding, is intrinsically dangerous, and legislatures may regulate it on the basis of its known propensity for harm without a showing of a particular harm. (Pollard 1990, quoted in: Groarke and Tindale 2008: 349)

The cases compare speeding to violent pornography. These are similar inasmuch as both are associated with known dangers. Then, as legislatures can legally regulate (i.e., prohibit) speeding, the argument concludes that legislatures may legally regulate (and perhaps, prohibit) violent pornography. This analysis adequately represents the structure of the given argument. Here is a paraphrase that reconstructs the elements explicitly.

- (1) Violent pornography is similar to speeding as both are associated with known dangers, e.g., propensity to increase the likelihood of collisions in the case of speeding. [*Similarity Premise*]
- (2) Speeding can be regulated as regards its propensity for harm rather than for any actual harm it causes. [*Base Premise*]
- (3) Violent pornography can likewise be regulated as regards its propensity for harm rather than for any actual harm. [*Conclusion*]

There is no explicit premise regarding the relevance of the compared elements. We could add such a premise if it were thought necessary. However, insofar as the analysis of an argument should be taken to attempt to reconstruct the argument in a manner that exhibits the structure of the argument, it is not necessary to include such a premise on an initial reconstruction, unless it was already there explicitly. Still, when one evaluates the strength of the argument, the relevance of the compared elements will be tantamount to the evaluation.

When turning to the evaluation of the argument, textbooks sometimes counsel a quantitative approach to similarity; however, the measurement device is too often left unspecified, or worse. Take, for example, the counsel of Bickenbach and Davies (1997) regarding the “quantity” of similarity.

Are the analogues relevantly similar to the primary subjects? This is the key question in assessing the argumentative value of analogies. In addressing it, we have to be concerned with the closeness of the analogy (How many properties are shared by the analogue and the primary subject?) and the aptness of the analogy (Are the shared properties relevant to the point of the argument?). (Bickenbach and Davies 1997: 330-331)

The problematic counsel concerns the question, “How many properties are shared by the analogue and the primary subject?” Of the myriad problems with this *counting* approach, perhaps the fact that any two items share a potentially infinite number of properties undermines this measure most decisively. The other question is surely the more important: “Are the shared properties relevant to the point of the argument?” Douglas Walton (2006: 97) urges a related query: “Are there relevant *differences* between the items compared that would tend to undermine the *force* of the similarities considered?” In the case under consideration, there may be relevant differences between speeding and violent pornography. For example, the latter may be protected, at least in the United States, by the First Amendment to the Constitution. There are *prima facie* reasons for thinking that speeding doesn’t typically qualify as speech; hence, it wouldn’t likewise be protected. Moreover,

this difference could explain why legislatures have had no problem regulating speed limits while at the same time have had great difficulties in regulating pornography.

As a second case, consider the argument regarding the likelihood of extraterrestrial life on Europa, one of Jupiter's moons. The Galileo spacecraft took photographs of Europa that suggest a liquid ocean underneath an icy crust. The argument from analogy based upon the existence of liquid water goes like this. First, note that Earth and Europa share abundant liquid water rather than containing water only as ice. Next, note that on Earth, liquid water is sufficient for the existence of life. It follows, then, that it is likely that there is some kind of extraterrestrial life on Europa (cf. Roach (2005) for the inklings of such an argument).

- (4) Europa and Earth are similar insofar as both bodies contain abundant liquid water. [*Similarity Premise*]
- (5) On Earth, abundant liquid water is sufficient for life. [*Base Premise*]
- (6) On Europa abundant liquid water is sufficient for life. [*Conclusion*]

We should be able to generate a further conclusion about the existence of life on Europa by considering (4) and (6) as premises for this further conclusion. Suppose that the analysis is complete. As with any argument, to evaluate an argument from analogy one considers the truth, acceptability or plausibility of the premises. In this case, it isn't clear that water is sufficient for life, though many scientists assert its necessity for life. But, supposing that the premises were acceptable, is there anything unique about an analogical argument's strength? The strength of the inference is some, perhaps vague, probability measure. In this case, the similarity claim seems very strong. The problematic premise regards the relationship between liquid water and life. Scientists seem hopeful, but that isn't enough for me to quantify the strength. Regarding CQ1, perhaps a relevant dissimilarity in this case regards the distance from the sun. Earth is much closer to the sun than is Europa. I take it that CQ2 is problematic in this case, as noted above. Furthermore, I am not aware of any cases of planets with sufficient water but which lack life; hence, CQ3 also gets an affirmative answer. Thus, the overall strength of this argument depends upon how we adjudicate the possibly negative answer to CQ2.

In general, the upper bound for the strength of the inference is a function of the measure of the similarity between the cases compared. If the cases are identical, equivalent or isomorphic, then the upper bound of strength will be necessity. Relevant dissimilarities will undermine the strength of the inference. It will often be the case that the measure of similarity (or dissimilarity) will lack precision.

3. ARGUMENTS FROM VISUAL ANALOGY

Take a visual argument to be any argument in which at least one of the elements is conveyed visually. Moreover, let an argument from visual analogy be an argument from analogy in which one of its elements is conveyed visually, typically the analogical or comparative premise. Depending on how easy it is to recognize the elements of a visual argument, the analysis and evaluation of such arguments shouldn't pose insuperable new problems beyond the difficulties of typical argument analysis and evaluation.

An article by Robert Martin and Robert May (1982) inspired the following scenario, though only some of the facts given come from that article.

VISUAL ANALOGIES AND ARGUMENTS

Of apes, only gibbons practice pair-bonded monogamy. All others practice some form of polygyny. Chimpanzees and bonobos practice a form of multi-male polygyny so called because multiple males have mating access to any females. Gorillas and orangutans practice a single-male version of polygyny. In gorillas the behaviour is harem-like insofar as a single male protects, and therefore mates with any of the females under his protection. Male orangutans don't protect a harem; instead, the male orangutan protects a home territory. The male will mate with any female within that territory. Insofar as apes represent our closest living relatives, at least in terms of genetics, it may be possible to discern the natural behavioural tendencies of humans from these relatives. With that in mind, compare the levels of gender body dimorphism apparent in apes and humans (see Fig. 2). This suggests that humans ought naturally to practice pair-bound monogamy.

Let's cull a few claims from this herd.

- (7) Gibbons practice pair-bounded monogamy.
- (8) Chimpanzees and bonobos practice multi-male polygyny.
- (9) Gorillas practice single-male harem polygyny.
- (10) Orangutans practice territorial polygyny.



Fig. 2. Primate Gender Body Dimorphism: (Males Normalized, Females Represented as a Proportion of Male) Adapted from (Martin and May 1982: 235)

From the claim regarding the mating practices of gibbons along with the pictured similarity between humans and gibbons as regards body dimorphism, one can conclude that the natural mating habit of humans is monogamy. One could choose to add the explicit claim about the relevance of the comparison between apes and humans for the determination of natural human behaviour. However, it isn't necessary in this case. We can get an adequate reconstruction as well as a powerful criticism without questioning the relevance.

The analysis of such an argument is rather simple.

- (11) Humans are more similar to gibbons than to any other non-human primate as regards body dimorphism [from analysis of pictogram]. [*Similarity Premise*]
- (12) Gibbons, alone among apes, practice pair-bonded monogamy. [*Base Premise*]
- (13) Humans are [probably] naturally monogamous. [*Conclusion*]

This captures the structure the argument. Moreover, as presented, one of the premises is given as a pictogram rather than as a proposition, inscribed sentence or verbal utterance. Hence, this argument meets my criterion for being a visual argument – some element of the argument is presented visually rather than verbally. Finally, I was able to apply the simple account of analogies to this case. Different reconstructions are possible, perhaps in giving different interpretations to the proposition associated with the pictogram. Still, there is no need to invoke any spooky and ineffable visual quality to the argument. If it is good, it is because the comparison between the morphologies of humans and non-human primates was apt for discerning the natural mating habits of humans. If the argument isn't good, then the comparison wasn't apt. It is plausible to think this argument fails from an inapt comparison.

Man is unusual in that every mating system known for the order of Primates as a whole can be found among contemporary human societies. Even if attention is restricted to those simpler existing societies that are uncontaminated by Western culture, the evidence remains equivocal: an analysis of 185 such societies found 74% to be basically polygynous, although economic considerations and a shortage of women mean that in practice about half adopted monogamy. Indeed, some argue that human mating systems do not have a biological basis, but rather the form adopted in any given society is dictated largely by socio-economic factors. (Martin and May 1982: 238)

Keep this criticism in mind, as it will apply to next example. The idea of this criticism is that the similarity between humans and gibbons as regards body dimorphism, as well as the dissimilarity between humans and the other non-human primates as regards body dimorphism, isn't relevant to the determination of the natural mating habits of humans. This doesn't show that the analysis of the argument, including the pictogram, was mistaken. Instead, it shows that the simple account worked. The analysis gave a reasonable reconstruction of the structure of the argument. The evaluation, following normal conventions, ended with reasonable criticism.

The article that inspired the above argument concerns a different physiological characteristic in apes that may be predictive of natural mating behaviour. Start with a preface for why animal physiology would be a good source for behavioural data.

Animal behaviour, both within and between species, tends to exhibit much greater variability than does morphology or physiology. [...] Discussion of the origins of mammalian social systems therefore benefits greatly from any linkage to morphological or physiological features, which provide anchor points that are relatively stable in evolutionary terms. Martin and May (1982: 234)

The following argument only considers the apparent physiological similarities between humans and great apes (i.e., gibbons aren't a part of this argument). In the argument, the ratio of average penis size to overall body mass is considered for the great apes (and humans) as well as the natural mating habits of the great apes. The argument projects the mating habits of the ape species most similar to humans physiologically onto humans.

VISUAL ANALOGIES AND ARGUMENTS

Orangutans practice territorial polygyny. The males of the species protect a home range within which a male has sole mating rights to any female. Gorillas practice single-male harem polygyny. A male gorilla protects a group of females and their sexually immature offspring. Male gorillas have sole mating rights to females within the harem. Chimpanzees, on the other hand, practice multi-male polygyny. All mature males within a group compete to mate with any females within the group. Moreover, a mating event is not confined to a single act, which is why multiple males mate in any mating event. As humans are closely related to these three apes, we may determine natural human mating behavior by comparing physiological characteristics between humans and apes (see Fig. 3). Hence, humans are naturally multi-male polygynous. (Adapted from Martin and May 1982: 235)

Again, it is easy enough to find the important claims from the passage.

- (14) Chimpanzees practice multi-male polygyny.
- (15) Gorillas practice single-male harem polygyny.
- (16) Orangutans practice territorial polygyny.
- (17) Humans are genetically close to apes, making ape behaviour possibly relevant to the determination of human behaviour.

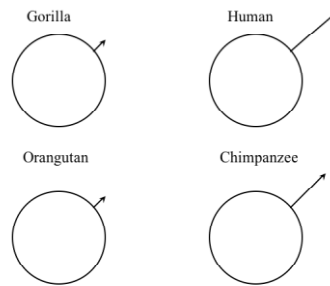


Fig. 3. Pictogram of penis to body ratio (Body Size Normalized)
Figure adapted from (Martin and May 1982: 235)

From this visual comparison, human males are most similar to chimpanzees. Indeed, on this comparison, humans are obviously visually different from both gorillas and orangutans. Hence, the natural mating habits of humans (or at least human males) is claimed to resemble the mating habits of chimpanzees: multi-male polygyny. Here is the full reconstruction.

- (18) Humans are more similar to chimps than to gorillas or orangutans as regards penis-to-body ratio. [*Similarity Premise*: from pictogram]
- (19) Chimps naturally practice multi-male polygyny. [*Base Premise*]
- (20) Humans are likely to naturally practice multi-male polygyny. [*Conclusion*]

Remember that the criticism of the previous argument counsels caution against accepting this conclusion on such evidence. Still, the visual comparison can be easily accommodated within the simple analysis. Though one could have made the comparison's results verbally explicit, it is unnecessary to do so to carry the argument. The argument operates, at least partially, visually. Now, imagine a critic complaining about the comparative similarity claim. Although one might restate the comparison verbally as (18), it seems likely that

a good response to the critic would be, “look at the pictogram again!” One sees the similarity/dissimilarity of the cases.

In the two previous examples, the information conveyed by the pictograms is quite precise. Take the visual data from figure 1 above. Human males are 1.1 times larger, on average, than human females; male gibbons are 1.02 times larger than female gibbons; male bonobos are 1.2 times larger than female bonobos; male chimps are 1.3 times larger than female chimps; male gorillas are 1.5 times larger than female gorillas; and, male orangutans are 2 times larger than female orangutans. It is tempting to think that this kind of accuracy or precision is a defining characteristic of assessable arguments from visual analogy. To counter this notion, I next consider several examples in which the level of precision is either much lower or non-existent.

Let’s start where the comparison needn’t be very precise. Rather, what is needed is a rough similarity. My favourite science story of the last 15 years regards the possible continued existence of the Ivory-Billed Woodpecker (IBWO). It 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, (Fitzpatrick, et al 2005), 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 (PIWO). The PIWO is also large, though not as large as an IBWO. The PIWO is predominately black and white, as is the IBWO, and the males of the species have red feathers on their heads, as do IBWOs. The birds are difficult to tell apart, especially on a quick glance. Yet, in this case, we have a blurry, short, shaky video. Without wanting to cover all of the elements of the argument, let’s focus on one frame of the video where it is claimed that we can see the back of the bird as it flies away.

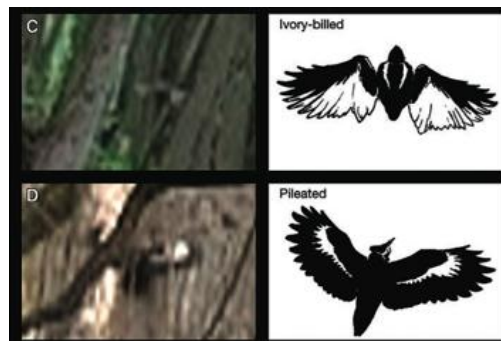


Fig. 4 Comparison of IBWO and PIWO with Artist Rendering
(Fitzpatrick et al. 2005: 1461)

As the fleeing woodpecker gains elevation, white plumage is clearly evident on the back between the wings. Ivory-billed woodpeckers have a pair of longitudinal dorsal stripes that approach one another on the middle and lower back, producing a white area that is visible on a dorsal view of a fleeing bird. Pileated woodpeckers have lateral white marks on the sides of the head and neck but lack any trace of white on the dorsum. (Fitzpatrick et al. 2005: 1461)

Image C is from the videotape of the possibly rediscovered IBWO. Image D is from the same area but was verified to be a PIWO. The associated drawings are “interpretive sketches by J. Fitzpatrick.” One way to understand the argument is that one compares the video image to the artist’s interpretive sketches. From this comparison, one determines whether the image is more similar to the sketch of an IBWO or a PIWO. If the image is more like the former, then the image is of an IBWO. To put this in terms of an analogy, the base is the artist’s sketch of an IBWO (and perhaps the sketch of a PIWO, call that the *anti-base*). The image is determined to share some characteristics of the base (and not to share characteristics of the anti-base). The base has the property of being “of an IBWO.” This transfers or projects, then, to the image. The comparison is rather rough. That is, we don’t have a stated measure from which to draw a comparison. Instead, we *eyeball* the images and the sketches. This gives an approximate comparison.

- (21) The image is more visually similar to the artist’s rendering of an IBWO than to the PIWO. [*Similarity Premise*: from image]
- (22) The artist’s rendering of an IBWO is of an IBWO. [*Base Premise*]
- (23) The image is of an IBWO. [*Conclusion*]

Not being an expert on woodpeckers, I wondered about the different postures in the artist’s renderings. Does it matter that PIWO isn’t in the same position as the IBWO? This is a possible negative answer the CQ1. Moreover, one must keep in mind the actual history of response to this article. Shortly after its publication, a response article called many of the visual claims into question (Sibley et al. 2006: 1555a). Although the case isn’t settled, most birders seem to be waiting for another sighting on which to rest their hopes for authentication of continued existence.

For an example in which no precision or accuracy is required, consider the below advertisement from the World Wildlife Fund (Fig. 5).

As opposed to interpreting this ad as a generic anti-hunting argument in which the tiger costume would simply stand in for any animal costume, let’s take seriously the notion that marketers compose ads deliberately. Part of the argument, though perhaps not all of it, regards changing attitudes towards the hunting of tigers (or tiger cubs). Surely, the full intent of the ad is to get people to do something to stop the hunting of tigers. Here, though, I want to focus on just one way we may draw a conclusion by appealing to an implied comparison. The comparison isn’t explicit—there are no actual tigers or tiger cubs in the picture. Instead, the picture gives visual cues towards the proposed comparison.



Fig. 5. Imagine this Is Yours: WWF

- (24) Children and tiger cubs are generally similar. [*Similarity Premise*: from photo?]
- (25) We disapprove of the hunting of children. [*Base Premise*: implicated by photo?]
- (26) We ought to disapprove of the hunting of tiger cubs. [*Conclusion*]

I think this reconstruction at least partially captures the analogical element of the ad. It doesn't, or perhaps doesn't fully, however, capture the emotional response one might have to the picture of a child being hunted. Thus, I can note that part of the rhetorical appeal of the WWF advertisement is that people may have a visceral (negative) reaction to the notion of hunting and killing children. The image also invites one to project that visceral disapproval of the hunting of human children onto tiger cubs. And that is the argument. Someone will be moved by the argument to the extent to which he/she agrees to project the feelings in the one case onto the other. The comparison isn't exact in any obvious way. I reconstructed the argument as a general similarity comparison. One could add particular ways in which children and tiger cubs are similar: innocent, cute, non-threatening, etc. Some of these may even be implied by the choice of the photograph. I'll consider the addition of such elements below when I discuss the ways that the image fits into the argumentative scheme.

4. FROM VISUAL TO VERBAL

In the visual examples analyzed above, I didn't fret over how I was able to paraphrase the argument verbally even though the arguments were presented visually, to greater and lesser degrees. That cavalier attitude needs to be founded upon some procedure. Let's start with a related problem that contains no visual worries. What does the following sentence mean?

(27) I saw her duck behind a tree.

On one interpretation, sentence (27) means that someone saw a woman stoop behind a tree. On another, sentence (27) means that someone saw an aquatic fowl that belonged to a woman; and that fowl was behind a tree. Depending on the relevant sense, one would paraphrase the claim appropriately. Can this notion of disambiguating verbal senses carry over to visual cases?

The notion of paraphrase in the case of verbal elements, e.g., in paraphrasing one sentence with another, can be explained in terms of meaning. That is, when we paraphrase sentence (27) with some more precise sentence that makes clear whether “duck” is a noun or a verb in the sentence, we simply take one of the meanings to be relevant. There is no need to posit occult propositional content to the sentences – it was already there in the notion of meaning. This is less obvious for cases of images.

The process of going from the image to the propositions they convey is not clearly defined or nor yet well understood, but to the degree that we can understand it, it seems to me that process will be heavily dependent on verbal reasoning and verbal expressions of reasoning, thus illustrating that ultimately the process of reconstructing visual images as arguments will depend on our ability to “translate” them in words and that in doing so we are dependent on our experience with verbal argument (thereby illustrating the dependence of the former on the latter). (Johnson 2005: 6)

Let’s reconsider some of the apparent visual elements from the above visual arguments. The comparison of the image from the videotape of an apparent ivory-billed woodpecker with two artist interpretations surely operates visually. On the one hand, consider the claim, “the pictured bird more closely resembles the artist’s rendering of an ivory-billed woodpecker than a pileated woodpecker.” On the other hand, take the set of images that include the original videotape image and two renderings. It isn’t a mystery that the verbal claim derives directly and literally from the visual comparison. It can be useful to think of how one might respond to a challenge regarding the truth of a claim. In this case, suppose someone challenges the claim that the video image is more similar to an IBWO than a PIWO. An obvious response would be to present the pictorial elements again. Perhaps, one might even say, “look at it again.” If this is right, then the image provides evidence for the verbal claim. In the case under consideration, the set of images does provide evidence for the claim that the pictured bird is more like an IBWO than a PIWO. I have argued elsewhere that this account, call it the *visual evidence account*, explains how many visual elements work in what seem to be visual arguments (Dove 2011). A visual comparison allows one to state some resemblance, which has as its source an image, diagram, or other visual element. This explains the cases of the pictograms, the pictures, and the artist renderings above. Yet, it is unclear whether this account makes sense of the advertisement.

The reason that an evidential account of the visual won’t work in cases like the anti-hunting ad is that the visual image operates non-literally, at least to some extent, in that example. Recall that there isn’t a picture of an actual tiger or tiger cub in the ad. Instead, it pictures a child wearing a tiger costume. Moreover, the child seems to be the target of a hunter. I think the picture could be taken as an attempt to awaken the sense of protection many adults naturally feel towards children. The picture doesn’t support that feeling in any evidential sense. If it does awaken that feeling, then the argument may work to allow someone to project that feeling (perhaps of moral outrage) from the case of

children onto the case of tigers. The picture doesn't contain any literal comparison between tiger cubs and human children. The comparison relies on contextual elements and associations given in and drawn from the picture. For example, the child is dressed as a tiger; the child is in a forest; the child is unaware of impending danger; the child poses no threat to the hunter; etc. As the child is dressed as a tiger, we can associate those features from the child to the tiger. Then, given the similarity between the innocent child and the innocent tiger, we can visit our moral outrage upon the hunter as if the hunter were hunting a child. In the original reconstruction of the argument, I gave only a general or generic comparison of similarity. On this reconstruction, I would add the particular features in which tiger cubs are similar to children.

The associations, visual and otherwise, that carry this argument to fruition, then, aren't evidential in the sense of providing evidence for the claims. Rather, insofar as the child can be *seen as* a tiger cub, any moral outrage one feels regarding the hunting of children is transferred to the implied tiger cub. The image serves first to remind the intended audience of their relationship with children. In this role, the image works with the text. Next, the image allows for the non-literal association of the child and the tiger – the seeing of the tiger as a child and vice versa. This *seeing as* is implicated by the image, but it is not given in the image. The costume acts like an *invitation* to see the child *as* a tiger cub. An old but valuable analysis of *seeing as* takes it to be a relation between what is literally given, that given thing is seen as, and a, perhaps transformative, mingling of the two elements.

Seeing that something is *like* something else, or mistaking one for the other because of the likeness involves a dyadic relation, *viz.* the relation of resemblance between them. But seeing one *as* the other involves a fundamentally or irreducibly triadic relation. There is (1) the thing whatsoever there to be seen, one way or another. Call this *M*. Then there is (2) what *M* is seen as. Call this *A*. So *M* is seen as *A*. The third factor is the elusive one, hard to differentiate from *M* and from *A* in the perception of *M* as *A*. But it is the crucial one for such perception, and whether or not it is “aesthetic” depends mainly on the prominence of this factor and how it functions. The reason that distinguishing it from either *A* or *M* is a delicate job is that it is a “function” of both. Both *M* and *A* are transfigured (transformed) or “expressively portrayed” in this third factor, though in different senses as we shall see. Call it *B*. It (*B*) is a sort of image of *A* (what *M* is seen as), an image that *M* embodies or “bodies forth.” Thus the attitude of the percipient to what he thus experiences is *like* his attitude to an image that he simply has, meaning that the logic of the report of seeing-as experience is like the logic of image-reports. You take the speaker's word for what he sees in this manner – though criticisms are in order with a view to what he may be missing or be “blind” to. (Aldrich 1968: 76-7)

We see *that* the child is costumed. We see *that* the child is in the forest. Etc. We know (or at least can come to know) that the costume is of a tiger. We know (or can come to know) that tigers live in forests. Etc. Then, both the child and tiger are transfigured in the relation of seeing the one as the other. Aldrich baldly asserts the elusiveness of an effective analysis of this element. Yet it has to be tied up with conceptual connections, contextual features and the like. When someone fails to see the one as the other (or sees the one as the other in some different way), the warranted criticisms will trace back to these conceptual connections and contextual features. For example, if someone didn't know what tigers look like, the possible argument of the ad would be vastly different from what was claimed above. Such a person would be *blind to* that feature of the argument. I would hasten to add that this is not unique to visual arguments. Folks are remarkable in finding different ways to paraphrase claims. Such paraphrases function on the background knowledge

or vocabulary of the interpreters. Someone unfamiliar with (or simply wrong about) the vocabulary of some claim in some argument will be *blind to* the real meaning of the claim.

The *seeing as* account of how to associate visual and verbal elements for the purposes of argument analysis and evaluation can be culled from some theories of verbal metaphor. The *seeing as* relation will be similar to the *interpreted as* relation. And, though the one is visual and the other verbal, if it works in the verbal case, it ought to work in the visual case. To test this claim, consider the following anti-smoking ad.



Fig. 6. Don't Swallow Other People's Smoke

In this case, the text directs us to the proper comparison. For, it is quite easy to misidentify the elements of the argument. The text reads, “Don't swallow other people's smoke; smoke free ambient is everyone's right.” This campaign is aimed at reducing the exposure to second-hand smoke. When I first saw the ad, I took the comparison to be between the health risks of smoking and those of fast food. Yet, with the verbal prompt, the real comparison comes out. I wouldn't want to be forced to eat cigarette butts. Inhaling second-hand smoke is like that. Hence, I ought not be forced to inhale second-hand smoke. There is an obvious further conclusion that I should, therefore, support a ban on smoking.

- (28) Inhaling second-hand smoke is like eating cigarette butts.
[*Similarity Premise*: implicated by combination of image and text]
- (29) I ought not to be forced to eat cigarette butts. [*Base Premise*]
- (30) I ought not to be forced to inhale second-hand smoke.

Now, I literally don't want to eat someone else's cigarette butts. They are disgusting, unhealthy, etc. The verbal prompt to get me to see second-hand smoke similarly does so without any literal claims about its grossness or health hazards of the smoke itself. However, when I consider how second-hand smoke gets to me from someone else, I am invited to realize that it was inside someone else's lungs before it goes into mine. Perhaps that is enough to trigger, project or transfer the grossness of the picture to the thought of inhaling second-hand smoke. The partially visual comparison of eating cigarette butts that

were previously in someone else's mouth with the implied smoke which was previously in someone else's mouth is quite enough for me.

Figure 7 gives an anti-tuna fishing/consuming ad with the following text.

When you see a tuna, think panda. The bluefin tuna is now on the brink of extinction, thanks to industrial overfishing and corporate greed. Breeding population could disappear from our oceans as early as 2012. Please do your bit to end this trade. Don't sell, buy or eat this endangered species. And please support the bluefin defense campaign. Operation Blue Rage, at www.seashepherd.org.

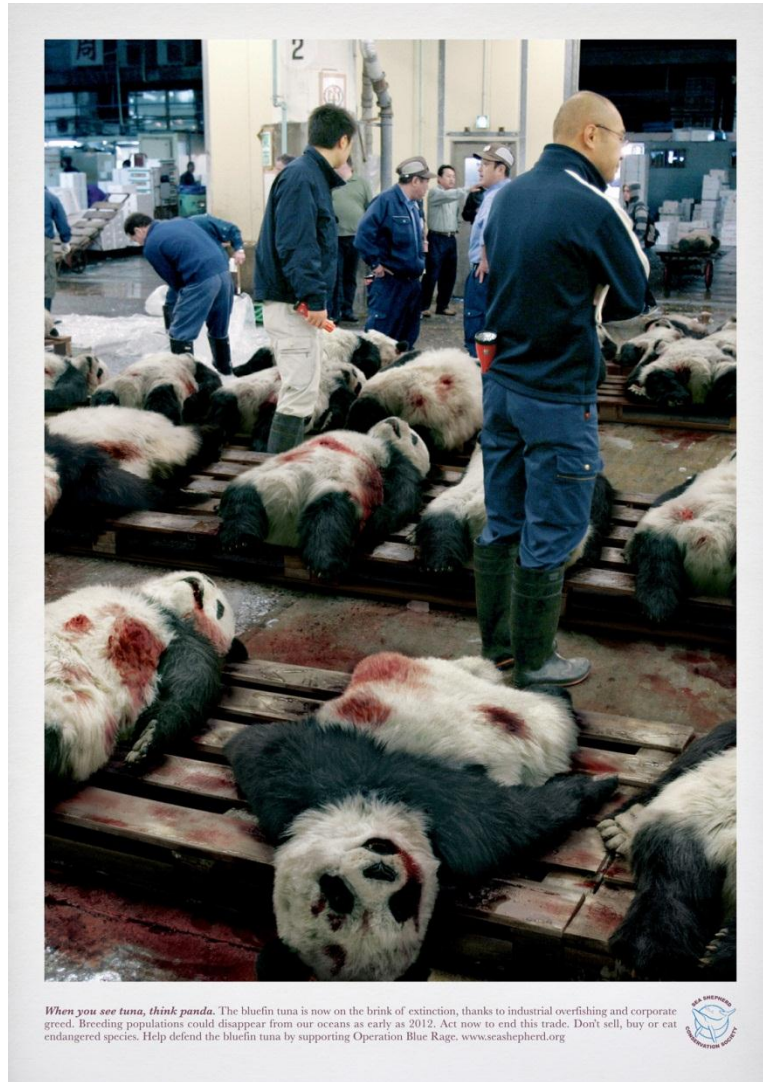


Fig. 7. When you see tuna, think panda

Clearly we are being asked to compare pandas with tuna. We are being asked to transfer our feelings about saving cute arboreal creatures onto less cute pelagic fish. The image isn't evidential in this case; the arguer wants the viewer to *see* tuna, which aren't pictured, *as* pandas. Clever marketing, but perhaps not rational argument.

5. CONCLUSION

One of the simplest analyses of analogical reasoning is the so-called similarity account. It takes analogical reasoning to rest on the comparison of two items or cases as regards a set of properties from which to project or transfer some further property from one case or item to the other. I've shown that this simple analysis also covers visual analogies. In the process of explaining the visual cases, I had to consider the importance of verbal elements. To this end, I considered two ways in which a visual element can be associated with a (set of) verbal claim(s). On the one hand, the visual element may operate as a kind of sub-argument by providing evidence for the associated verbal claim(s). Though there are many theories of evidence, there are straightforward ways in which an image can provide evidence for a verbal claim. On the other hand, some visual analogies aren't literal. The comparison requires, therefore, a *metaphorical seeing*. One way to explicate such cases is through the notion of *seeing as*. And, though it can be a difficult notion to capture fully, it doesn't raise difficulties beyond what one would encounter in purely verbal discourse.

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Commentary on “VISUAL ANALOGIES AND ARGUMENTS” by Ian Dove

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1. INTRODUCTION

There is much ground covered in Professor Dove’s paper, only some of which can be covered in a brief commentary. My focus will be on (a) developing further some of the replies he makes to skeptics and (b) suggesting areas in which further work needs to be done. This will be a very sympathetic commentary, as will become clear soon enough. The sorts of examples he uses in the earlier sections of his paper—those on the evidential use of visual analogy—are the ones I have in mind in the reflections that follow.

2. CLARITY AND CONTEXT: VERBAL AND VISUAL

Professor Dove anticipates the skeptical concern that visual or imagistic arguments by analogy may be too unclear, vague, or imprecise in virtue of containing a visual element. The idea appears to be that the content expressed by images is not as clear as the content expressed by sentences. Dove points out that sentences, too, can be unclear. This section will develop that line of thought, arguing that without the appropriate context, the similarity claim—the heart of analogical arguments—can be profoundly unclear.

2.1 Is a knife more like a fork, or is it more like a gun? (This question is inspired by some of Weinreb’s (2005) remarks on the purpose of an analogy.) There are contexts in which it might be quite reasonable to say that a knife is analogous to a fork, and contexts where it might be more reasonable to say that a knife is analogous to a gun. Consider the following two scenarios.

Scenario One

A reception is being organized at a large banquet hall. Many heads of state will be attending, and there have been violent protests against these heads of state. Steak is on the menu, so the kitchen staff was planning to place serrated steak knives on the tables. Officials in charge of security argue that these knives cannot be allowed since they are a security threat. The kitchen staff counters that a knife is like a fork, and forks are permitted. Security counters that it is exceedingly difficult to kill someone with a fork, and that a serrated steak knife is more like a gun than a fork for security purposes since both could be used to quite easily kill someone.

Scenario Two

A small wedding reception is being planned; only family of the bride and groom will be in attendance. It turns out that all the family members get along smashingly. Alcohol will be served, but no one is concerned since the subset of attendees who consume alcohol become slobberingly affectionate when they do so. Steak is on the menu, and serrated steak knives are planned for the table. In this context, it would be quite sensible to claim that a knife is more like a fork than a gun. There is simply no concern in this context about anyone in attendance deliberately harming anyone else. Even if we consider the security risks involved with unintended harm, a serrated steak knife still seems more like a fork than a gun. Someone might plausibly claim that since alcohol will be served and consumed in significant quantities, there is a risk of accidental mishandling of a gun if one is present, and even the accidental firing of a gun is deadly. The risk of a table knife being accidentally mishandled so as to cause death is so low that a knife, in this context, would be treated as more like a fork than a gun. (If violent drunks were expected to be present, that could change everything.)

We started with a verbal question: is a knife more like a fork or a gun? There is no clear, fact of the matter regarding how to answer this question independent of some context. Similarity statements as well as similarity-based reasoning and argument presuppose some context. Often the relevant details of the context are so obvious that we do not even realize that a similarity based argument is drawing on the details of the context. This is how it is with analogical arguments, both verbal and visual.

2.2 Professor Dove anticipates the concern that visual arguments from analogy are insufficiently clear in virtue of the use of visual information. He replies by pointing out that there are ambiguities at work in verbal information. This is true, and it is relevant in establishing a case that the use of visual information should not be barred from analogical arguments based on its alleged lack of clarity. The examples above are an attempt to further develop this point by showing that a lack of clarity can infect the *similarity claim*, and this type of claim is at the heart of analogical reasoning and argument. Similarity claims, whether of the form

x is similar to y

or of the form

x is more similar to y than z is

are only clear against some assumed background or context. Take away that context, and the claim could become sufficiently unclear as to make its assessment impossible. If we examine images on their own, i.e. with no context, it would be difficult if not impossible to assess whether relations such as similarity or analogy hold between them. The verbal case is no different. The addition of context is required to give sufficient clarity to the similarity claim—whether visual or verbal—for it to be assessed.

3. EXAMPLES FROM MATHEMATICS AND SCIENCE

In response to the above, it might be replied that clarity is a matter of degrees, and though both linguistic and visual similarity claims require context for any measure of clarity, appeals to images are still not as clear as fully linguistic assertions. To reply to this sort of concern, let us look briefly at mathematics and natural science.

3.1 First, let us look at mathematics. It is useful to note that Euclidean geometry was not fully axiomatized until the twentieth century. Before this, the images were doing some of the work in the proofs. Moreover, no one would say that prior to the twentieth century, geometry was irrational or that its proofs lacked sufficient clarity to meet the standard of rational acceptability. The bar is pretty high in geometry when it comes to clarity, and if images could be used here, it is hard to see why they might not be useful elsewhere.

3.2 As still another example from mathematics, consider the work in which Imre Lakatos' (1963a) discusses arguments in the history of mathematical arguments about the nature of polyhedra (see also his 1963b; 1963c; 1964). There was extensive argument over how these structures were to be defined, over the nature of their essential properties. References to images were made in these arguments in the attempt to define them, and in the attempt to challenge purported definitions and defining equations. An interesting feature of the way images are used in the dialectic over polyhedra is that, at least in some cases, our intuitions on how to classify images is clearer than an abstract, linguistic definition relating vertices and sides. The construction of images (figures) plays a useful role in that debate in challenging, modifying, and clarifying verbally expressed views about the nature of polyhedra.

3.3 Two concerns might be raised about the preceding line of argument. The first is that the examples discussed in 3.1 and 3.2 are not explicitly analogical. The second is that mathematics might be a special case, and just because images work there, it does not follow that they will work elsewhere. In reply to the first concern, I note that the examples above were simply used to motivate the point that images could be used in a clear and rationally acceptable manner. Regarding both these concerns, let us turn to an analogical use of images, and one that is outside of mathematics.

3.4 In paleontology, discovery of *Archaeopteryx* specimens was cause for much debate. These prehistoric creatures had features in common with both dinosaurs and modern day birds. They were winged, feathered creatures, but there was some debate over whether they were ground based birds (like chickens or pheasants) or whether they were perching birds (like orials) or air born predators (like eagles). Shelley (2003) has an insightful discussion of this debate in the context of examining the role of multiple analogies. To keep things simple and within time limits, we will only examine one analogy at work in this debate. The claim was made that the *Archaeopteryx* was more similar to ground based birds than to perching birds or air born predators. Shelley (2003: 47) reproduces an image from Ostrom (1974: 37) which shows sketches of some of the bones of the feet of *Archaeopteryx* and of the feet of various species of modern birds. These images are offered as evidence for claim that *Archaeopteryx* feet are more like ground based birds than perching birds or aerial predators. (The images are not reproduced here since permission to reprint free of charge could not be obtained; the images are available through the aforementioned sources in this paragraph.) The imagistic evidence is quite powerful for the similarity claim. Its power issues in part from the clarity of the visual

evidence. Quite a bit of context has to be provided for the visual evidence to have the effect it does, but that is no surprise. We could rest content with elaborate sentential descriptions of the feet, and I am not making the claim that the argument could not be made without images. That said, after being supplied (in a linguistic manner) with the context, which includes information about the structure of the toes of ground based birds as compared to those of aerial birds, the images provide nontrivial support for the view that Archaeopteryx feet are more like ground based birds than aerial birds, which was part of the support for the claim that it was a ground based bird.

4. QUALIFICATIONS AND CONCLUSIONS

More work is needed on visual analogical arguments, and I only have time to sketch out some of areas in which this work needs to be done. Much of this has to do with the nature of the similarity claim.

4.1 It was briefly indicated in 2.2 that similarity claims could be two place (x is similar to y) or three place (x is more similar to y than z). To keep things simple, I treated the similarity claim involved in the Archaeopteryx example as three place (Archaeopteryx feet are more like those of ground based birds than aerial birds). Since the images of the feet of *various* species of birds were provided, the comparison is actually of greater complexity. Something of the form

a is more like b and c than like w , x , y , or z

would more closely capture the reasoning in question. Extended sentential descriptions of the feet of that many different types of creatures may not render perspicuous the similarity relation that holds between them. The images, though, do render the similarity in a perspicuous fashion. We need to understand better the variety of similarity claims that may be at work in analogical arguments, and we also need to understand better how they are processed. It might be claimed that, in principle, the entire argument could have been carried out using sentences, and that there was no need for images. Even if we grant the truth of that claim, it may be importantly beside the point. What if it turns out that we can more *reliably* grasp certain types of similarity relations using images than by using sentences? If this turns out to be so, then it would be an important epistemic consideration in favour of the use of images, and whether it is so is a question to be examined empirically, not from the arm chair. Other considerations such as *speed* and *efficiency* may also mitigate in favour of the use of images in some situations. See Goldman (1992) for a discussion of reliability, speed, and efficiency in epistemology. It is just not obvious that a seven place similarity claim is best handled in an entirely linguistic manner; if images can improve our ability to process such claims in arguments, then it is not clear why we should deny them a role in argument.

4.2 More work is needed on understanding the role that context plays to either increase or decrease clarity. While similarity claims are often (and perhaps usually) made with no explicitly articulated purpose or context, there is a context that is assumed. Moreover, similarity claims sometimes do not assert the relevant respects in virtue of which the similarity holds. For example,

x is similar to y ,

is one way of making a similarity claim, but it could also be done like this:

x is similar to y with respect to

(I trust that it is obvious that there can be such differences not only with respect to two place similarity claims but with respect to n place similarity claims as well.) Analogical arguments tend to be at their most forceful when the respects in virtue of which the similarity holds are either articulated or at least well understood (even if not exhaustively articulated). How images can be used both to *express* the respects in virtue of which similarity holds and to help us to *grasp* the respects in virtue of which it holds—both of these need to be studied further. It is likely that context will play an important role in foregrounding or backgrounding considerations that are expected to be salient in the use of images. This will involve understanding the complex interplay between sentences and images, and this may move us in the direction of a multimodal account of argument.

4.3 I believe professor Dove has touched on something interesting and important: the use of images in analogical reasoning and argument. I have attempted to say a few words in support of a number of the ideas in his paper, and to suggest some directions in which future work on the subject could be done.

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