Words and Images in Argumentation

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Abstract   In this essay, I will argue that images can play a substantial role in argumentation: exploiting information from the context, they can contribute directly and substantially to the communication of the propositions that play the roles of premises and conclusion. Furthermore, they can achieve this directly, i.e. without the need of verbalization. I will ground this claim by presenting and analyzing some arguments where images are essential to the argumentation process.

Keywords   Visual argumentation · Interpretation · Heterogenous argumentation · Propositions · Images · Sentences

1 Introduction

One of the main challenges facing argumentation theory today is to make sense of the use of visual images in human argumentation (Johnson and Blair 2000; Groarke 2008).[1] That images are commonly used with persuasive ends and in argumentation is an uncontroversial fact. The challenge is to make sense of this widespread use. One pressing question is whether visual images merely illustrate or accompany verbal argumentation, or they "can, like verbal claims which are the epitome of

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[1] When talking of images in this context, I mean external man-made images, like pictures, symbols, icons, diagrams, maps, etc. My account is not intended to cover mental or natural images. I will also restrict my examples to static images, even though I suspect the lessons I will try to draw would also apply to moving images.

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argument, be understood as speech or communication acts that contribute more directly to argumentative exchange" (Groarke 2002, 140). Like Gilbert (1994), Blair (1996), Richards (2009), and many others, I strongly believe that not all images used in argumentation play a merely illustrative or ornamental role. Instead, in some cases, images can substantially and directly contribute to one of the key components of argumentation, i.e., the communication of propositional premises and conclusions. Notice that my claim is an existential one. I am not claiming that this is the only way words and images interact, or that all images used in argumentation play this communicative role. These later claims are clearly false. Sometimes images are used to reinforce or decorate texts, adding nothing substantial to their content (Carney and Levin 2002; Holliday 1975). What my antagonists (Johnson 2003; Tarnay 2003; Alcolea-Banegas 2009) claim is that this is the only kind of role images can play in argumentation. All I have to show is that images can play a more substantial role, i.e., that sometimes images do play the kind of communicative role that has traditionally been assigned exclusively to words. To show this, I will present some examples of what, following Barwise (1993), I will call heterogenous arguments, i.e. arguments that are not conveyed through a single medium, but instead make use of both verbal and visual resources. Then, I will argue that the contribution images make in them is substantial and direct. They help convey fully propositional arguments, without the need of verbalization or verbal reinforcement.

My main argument runs as follows: In argumentation, it is not rare to find arguers successfully and seamlessly combining verbal and visual resources to communicate their positions and arguments. Sometimes, the images they use do not merely garnish or reinforce their words, but are essential to communicate their premises or conclusions. If you remove the images, you get an incomplete message that cannot be completed by appealing to implicit or contextual information. This strongly suggests that what is missing is precisely what the images contribute. This contribution can be either sub-propositional (i.e. properties and functions that, properly combined with information conveyed through other means, like words, or available in the context, can yield full propositions) or fully propositional (Goodwin 2009).

Mine is an argument to the best explanation: I claim that there are uses of images in argumentation—what I have called in the introduction "heterogenous arguments"—that are best explained by assuming that images directly and substantially contribute to the communication of premises or conclusions. Consequently, my argument depends on two key premises: First, that arguments of this kind actually exist and second, that their existence can be best explained by the aforementioned hypothesis. To ground these premises, I will present three simple heterogenous arguments and try to show that what happens in them is exactly as described in my hypothesis: that images help convey sub-propositional (in the first case) and propositional (in the second and third case) information that is essential to the communication of the argument's premises (in the first two cases) and conclusion (in the last one). Then, I will show why this hypothesis is simpler, and therefore better, than competing hypotheses. In particular, I will argue against the competing hypothesis that what images directly help convey are words and sentences, and only

indirectly propositions. I will show that it is very unlikely that every time an image is successfully used to communicate an argument, a determinate (but partially unpronounced) verbal argument is either actually meant in the mind of the speaker or recovered in the mind of the hearer.

To ground this later claim, in the next section I will take on board some of Robert Stainton's recent work on sub-sentential argumentation (2006), that is, arguments where premises or conclusion are conveyed verbally, but without using full sentences. There, Stainton gives a detailed account (based on Sperber and Wilson's relevance theory, 1986, 1995), of how easily we combine verbally conveyed information and ostensively conveyed information (i.e. information conveyed by showing or pointing at things in the environment) to communicate arguments whose premises and conclusion are fully propositional. I will extend Stainton's arguments to show that fully propositional arguments can also be communicated with the aid of external images (like pictures, photographs, maps, etc.), without the need of full sentences.

2 From Subsentential to Heterogenous Argumentation

The central goal of Robert Stainton's (2006) book Words and Thoughts is to argue that subsentential speech is a genuine phenomenon and to spell out some of its implications for our understanding of the relation between language and thought. By "subsentential speech", Stainton means cases where the speaker utters ordinary words and phrases, not embedded in any larger syntactic structure, and yet she literally conveys a full proposition easily graspable by the hearer. In genuine subsentential speech, if it exists, what is produced is not a semantically or syntactically elliptical sentence, but a subsentential linguistic unit: what is uttered not only sounds like a bare phrase, but actually is a bare phrase.

According to Stainton, in subsentential speech, phrases are used with their regular meanings, i.e. when uttered in isolation—for example, by a wife calling her husband's attention to the fact that he forgot his tie—, the phrase "a tie" means exactly the same as it does when it occurs inside a full sentence like "John always gets his boss a tie for Christmas". Since these meanings are not propositions, a pragmatic mechanism is set into gear to determine the proposition the speaker intended to convey. Consequently, an expression need not be a full sentence to be used in argumentation; however it must be used in such a context that the hearer may still grasp a full proposition without needing to complete a sentence in her mind. Context must provide the proposition's missing elements, i.e. elements of the proper semantic type. If the phrase uttered is a predicate, for example, the context must make an entity salient, so that it may serve as subject of the proposition. In other words, phrase and context must provide adequate arguments and functions, capable of combining into a full proposition (Stainton 2006, p. 158). In this story, the proposition's constituents are the different elements the hearer needs to combine to recover the communicated proposition. Some of them come from the uttered expression, while others come from the context. Yet, no matter whence they come,

once they are combined into a proposition, they work seamlessly together as logical components.[2]

In order to show that the content of subsentential speech is fully propositional, Stainton argues that what is conveyed subsententially stands in entailment relations with propositions expressed by complete sentences. If such entailments exist, they would be hard to explain without accepting that subsentential phrases can be used to convey full propositions. Thus, he needs to show that there are genuine cases of sub-sentential argumentation, i.e. cases of argumentation where premises or conclusion are conveyed sub-sententially. (Stainton 2006, 184–185) He does this by presenting the following example:

> 1. ALICE AND BRUCE
> Suppose Alice and Bruce are arguing. Bruce takes the position that there are not really any colored objects. Alice disagrees. A day or so later, Alice meets Bruce. Having just read G.E. Moore, she offers the following argument. She picks up a red pen, an says "Red. Right?" Bruce, guileless fellow that he is, happily agrees. Alice continues, "Red things are colored things. Right?" Bruce nods. At which point, Alice springs her trap: "So, Bruce, there is at least one colored thing. This thing." (Stainton 2006, 181)

According to Stainton (and I completely concur), Alice successfully conveyed an argument with fully propositional premises and conclusion. Furthermore, her first premise was conveyed without the need of a full sentence: neither Alice used one to convey her premise, nor Bruce used one in his mind, so to say, to recover it. Furthermore, the conveyed premise was a proposition, with "implications with respect to the existence of colored things" (Stainton 2006, 184) Stainton argues for these claims appealing to well known reasons of subdetermination: there is ample evidence that Alice did not mean (nor Bruce recovered) "This pen is red" as opposed to "This thing is red", or "This is red", or "This thing in my hand is red", etc. Any of these sentences can be used to describe what Alice meant, but such description is not necessary for the communication of the corresponding proposition. He also extensively considers, argues, and presents empirical evidence against other possible explanations, like Alice's speech being actually elliptical, of her having produced a completely verbal sentence with an unpronounced part, her using shorthand for a complete sentence, Bruce recovering the disjunction of all possible verbal reconstructions, etc.

Summarizing, if Stainton's arguments are right, the contribution of Alice's ostensive act to the communication of her argument was both substantial and direct. It contributed novel and necessary information for the communication of one of her premises, and did so without the need of a verbal intermediary. In other words, what Alice conveyed to Bruce by holding up the pen was the pen itself, and not a word.

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[2] This in no way commits us to taking propositions to be structured entities. As Bealer (1993, 1998) has insisted, talk of combining constituents into a proposition need not be taken too literally, as if a proposition was literally assembled out of its parts in the hearer's mind. Instead, it is better to think of the hearer as inferring what proposition is being communicated out of the information provided by words, context and images. A more detailed account of this process can be found in the aforementioned (Stainton 2006) and (Sperber and Wilson 1986, 1995).

Now I will argue that similar arguments can be used to show that the same holds for the use of some images in argumentation. They also contribute novel and necessary information for the communication of arguments, without the need of fully sentential reconstruction.

It is not hard to generalize Stainton's account presenting similar data, not in terms of the sentential/sub-sentential distinction, but through the eyes of a verbal/non-verbal distinction. Notice that Stainton's central concern is intra-linguistic. His main interest is to topple sentences from their central place in language, i.e., to show that linguistic phrases can play the same role as sentences in assertion and argumentation. My main interest, in contrast, is to topple verbal language from its central place in argumentation, i.e., to show that non-linguistic entities like images can play a role in argumentation as substantial as that of phrases and sentences. Thus, I take the fundamental distinction to be that between fully verbal and non-fully verbal arguments.[3] Stainton's example above is a clear case of non-fully verbal argumentation, since the argument was conveyed using both verbal and non-verbal resources. The non-verbal elements came from the contextual environment. Yet, it is not hard to see that some of them could have been conveyed by other non-verbal means, like images. Consider the following example, fairly homologous to Stainton's:

> 2. CARLY AND DANIEL
> Carly and Daniel are reminiscing about their old friends from college. At a certain point in the conversation, they start arguing over whether John, an old friend, ever danced at parties. Carly clearly remembers him dancing at a few parties, but Daniel believes that he never did. To convince David, Carly takes out one of her photo books, picks out a picture from an old party and pointing to one of the dancers says "John. Right?" Daniel nods. "So, Daniel," Carly concludes, "he danced at least that one time."

Just as in the previous argument between Alice and Bruce, in this new argument Carly's sole premise is conveyed using both a subsentential phrase—"John"—and an image—the photograph. Both contribute something to the communication of the premise. "John" delivers its referent as argument for the function provided by the photograph. Together they provide all the necessary elements from which the full premise can be pragmatically composed, i.e., they provide enough information from which Daniel can correctly identify the relevant premise. Both word and picture are necessary for its communication. If Carly had used the same words, but had no photograph in her hand, the communication act would have been infelicitous, and no premise would have been conveyed. However, communication of the premise was successful, so the photograph seems to have helped to convey the necessary missing information. This information the photograph provided was neither already available in the context, nor conveyed using other covert or explicit means. Also, when combined with the information provided by "John", the resulting premise was fully propositional. Otherwise, it could not entail (in combination with other background information) the verbally conveyed conclusion that John danced at least

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[3] A more detailed account of my own take on Stainton's views on this point is developed in Barceló (forthcoming).

that one time (Perini 2005). So we must conclude that the role of the picture in Carly's hand was to contribute some sub-propositional information that was necessary to communicate Carly's argument.

Just as in Carly's argument, it is not rare to find other situations where words and images interact in a similar fashion to communicate fully propositional messages. Take the well known "wanted" signs that are still common in banks (in Mexico) and post offices (in the USA). In them, the word "wanted" does not convey the full message by itself. Its linguistic meaning falls short of a proposition. Just like "Red" in Stainton's example above, this susbentential phrase conveys a predicate in search of a subject. We need something that tells us who is wanted, and that is just what the picture does. It depicts someone, and it is of that person that the sign says he or she is wanted. It is only when the audience combines what the picture represents with the semantic meaning of the word "wanted" (plus other contextual information) that they grasp the proposition that the depicted person is wanted.

A similar thing happens in store catalogs and ads. A "$35.00" sign next to the photo of a pair of shoes combines with it to assert that shoes of that model cost 35 dollars a pair. The best explanation for all these cases is that the proposition conveyed was communicated with the substantial help of the relevant image, i.e., that the image made an essential contribution to the composition of the conveyed premise. Where else could such information come from? How else could we find out who was wanted, if not by looking at the attached portrait? How else could we know what kind of shoes were advertised as $35.00 a pair, if not by looking at the picture? How else could Daniel know what was Carly trying to communicate about John, if not by looking at the photograph? In every case, the simplest answer is that such missing information was directly conveyed by the use of the relevant pictures.

One may still argue that what was directly conveyed with the use of such pictures was not a proposition, but a sentence, and that it is through these verbal means that the relevant propositional premise was actually communicated. This is the way most of my antagonists make sense of heterogenous arguments (for example, Johnson 2003; Tarnay 2003 and Alcolea-Banegas 2009). On their account, in order to recover the propositions that play the role of premises and conclusion in these arguments, one must first reconstruct them verbally. This means that putative heterogenous arguments are either not actual arguments, but only visual clues to recover genuine (i.e. verbal) arguments (Johnson 2003), or genuine arguments that do not actually contain propositions as premises and conclusions (Groarke 2002; Alcolea-Banegas 2009). In contrast, I will show that propositional premises and conclusions can be conveyed with the aid of visual images, without the need of verbal reconstruction (either on the side of the hearer or the speaker). This later point is crucial to defend heterogenous argumentation as a real phenomenon. For heterogenous argumentation to be a real phenomenon, putative heterogenous arguments must be both genuine arguments and genuinely heterogenous. In order to be genuinely heterogenous, the images they contain must be more than mere visual clues to recover verbal elements; in order to be genuine arguments, they must at least put forward clear premises and a conclusion (Blair 1996). That is why it is not enough to show that propositional premises and conclusions are actually conveyed. It is also necessary to show that no verbal reconstruction is involved.

My evidence for this later claim will be basically Stainton's (2006): Arguers can successfully use a subsentential phrase and a picture to communicate a full proposition in situations even when there is no information to decide among the many available verbalizations. In these cases, no sentence could have been intended (by the speaker) or recovered (by the hearer). Take Carly's example above. Assume a sentence was indeed intended. The burden of the proof lies on the side of the defender of the sentential hypothesis to tell us which sentence was intended. Presumably, it must have been one of (1)–(4), or some other specific sentence:

1. John danced at the party.
2. John was dancing when this picture was taken.
3. John was at the party dancing.
4. John danced at Johanna's birthday party.

But there is no information available, neither in the context, nor in Carly's words and photograph, to pick just one of these, or to pick any other sentence. Even though the photograph contains much more information than any of the candidate sentences, they are also precise in ways that the communicated proposition is not. What Carly conveyed to Daniel was neither that John danced at the party, nor that John was dancing when the picture was taken, or that he danced at Johanna's birthday party, etc. It was something more vague, but propositional nevertheless. The key problem here is not that there could be no sentence whose content was exactly the conveyed proposition, but that no specific sentence could have been communicated, given the available information. In Stainton's words:

> It may be that there are sentences that express just what she meant – e.g. in natural languages that she doesn't speak, or in logical languages. There may even be sentences in her own language that we theorists could find, which express her meaning. But if she herself intended a sentence, then it must be one that she herself accessed; so, the mere existence of sentences of this kind, if they aren't "available" to her, is irrelevant to the present argument. (Stainton 2006, p. 69 n. 2)

I wholeheartedly agree with Alcolea-Banegas (2009) and Tarnay (2003) that the verbal reconstruction of heterogenous arguments hardly ever recovers their full original content. However, the moral I draw goes in the very opposite direction than theirs. Precisely because it is not always possible to translate heterogenous arguments into verbal ones, it is very unlikely that that is what happens every time we interpret heterogenous arguments.

It might be objected that what this really shows is that no proposition was actually communicated. However, and as already mentioned, without a proposition it would be hard to see how the entailment relations behind the argument hold. Furthermore, following Stainton, we might still argue that there is indeed a determinate proposition here, since we can rule out some sentences as clearly inadequate (e.g. "John is a suitable boy"), identify others as closer (e.g. "John was dancing at some party"), etc. Without a target proposition to be aimed at, this would make no sense. Consequently, we must accept the simpler hypothesis that there is a proposition here, but no sentence.

Here is one further argument. If someone were to ask Carly what sentence she meant, she would most likely find herself at a loss. The same holds for the wanted ad and the shoe catalog. In general, when asked to verbalize their messages, image users themselves need to guess at what sentence best captures what they intended to communicate. Thus, they could not have had such a sentence in the mind all along, as would be required if they had actually meant to communicate it.

Similar problems arise for the proposal that, even if Carly meant to convey no sentence, what Daniel recovered was a full sentence. Once again, there is no principled way to decide between alternative sentences. Why use "dance" instead of "was dancing"? Why use the word "party" instead of "get together" or some demonstrative like "there" or "then"? There is not sufficient available information to single out a sentence as the recovered one. In all the aforementioned cases—Carly's argument, the wanted sign and the shoe catalog—it is fairly clear that no sentence needs to be elicited in order to get the relevant message. The person who reads the wanted sign does not need to recover a sentence like "This man is wanted", "Someone who looks like this is wanted", "A fair man of broad nose and small eyes is wanted" or anything of the sort. Her understanding of the sign's message does not need to pass through any of these sentences. She can grasp the proposition without verbalizing it. Similarly, there need not be any sentence in the mind of the shoe costumer who looks at the catalog with the picture and the price, in order for her to grasp the proposition that those kind of shoes cost that much. Finally, Daniel did not need to complete any sentence in his mind before grasping Carly's premise. In all these cases, verbalization was not needed for communication to take place. Of course, once we have grasped the relevant proposition, we can use a number of sentences to describe it, but that does not mean that such verbal description is necessary for the communication of the proposition.

3 Using Images to Convey Propositional Premises and Conclusions

So far, I have presented a very simple case of heterogenous argumentation, where an arguer successfully communicated a complete argument with the substantial aid of a visual image. Furthermore, I have shown how the the simplest way to make sense of what happens in such example is to accept that the image contributed subpropositional information that was necessary for the communication of one of the premises. Also, I have argued that since no specific sentence was available to the hearer or speaker, we have no reason to believe that what was primarily communicated was a sentence, instead of a proposition. Remember again that my claim is existential. There may be cases of argumentation where images are used to merely reinforce a verbally conveyed argument, or where verbalization is actually required for the relevant argument to be conveyed. However, I hope to have shown that there are cases, like Carly and Daniel's, where images play a more substantial role.

I now turn to show that images can also be used to convey propositional premises without the assistance of any linguistic material, either sentential or sub-sentential. Consider the following example (similar examples can be found in Blair 1996,

2003; Birdsell and Groarke 1996, 2008; Shelley 1996, 2001; Gilbert 1997; Groarke 1996, 2002; Lunsford and Ruszkiewicz 2005 apud. Groarke 2009):

> 3. EUGENE AND FEDERIKA
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> Eugene and Fred are driving through town on the same car, looking for a way out into the highway. They have stopped at an intersection. Federika is at the wheel, and Eugene has a map of the city in his hands. She turns on her blinkers to indicate her plans to make a right turn. Eugene tells her not to do it. "Look," he says, pointing at a section of the map showing that the street Federika was about to turn is closed, "we will never get to the highway that way."

According to my hypothesis, what happens in this case should be seen as another simple case of heterogenous argumentation. Eugene and Federika disagree on whether making a right turn will take them to the highway, so Eugene offers an argument for his position. One of the argument's premises is expressed neither by a sentence nor by any other linguistic means, but through the use of an image. That an argument was actually conveyed is clear from the fact that it would make little sense for Federika to ask Eugene why he thinks they will never get to the highway by making a right turn. If Eugene had only asserted his disagreement, instead of actually arguing for it, the question would be felicitous. However, it is clear that in the current scenario the question is infelicitous and an argument was actually conveyed. Without using full sentences for all his premises and conclusion, Eugene successfully managed to convey to Federika a complete argument, with fully propositional premises and conclusion. No matter how clever Federika might have been in exploiting contextual information, there was no way she could have grasped the premise that the street she was about to turn into was closed, but by looking at the map in Eugene's hands. Furthermore, given that no specific sentence was available to him in the context, we can conclude that Eugene succeeded in conveying his argument without the need of a fully verbal version in his mind. Similar reasons tell us that Federika directly recovered Eugene's premise without the need of constructing a sentence in her mind. Thus we can conclude that, in conveying his argument, Eugene's use of the map played a role as substantial and direct as his words.[4]

It could be argued that what happens in this case is not true argumentation, because what is supposedly transmitted from premises to conclusion is not truth. After all, we do not usually say that maps are true or false.[5] At most, we say that they are accurate or inaccurate; but accuracy is not truth (Crane 2009). However, whether a representation can be true or not is not a question to be solved only in the way we talk about it. Even if we do not commonly use the words "true" or "false" to talk about maps, it is clear that we recognize the difference in our use of such representations. Consider the example above. Suppose Federika ignored Eugene's advice, turned right and found out that the street was not closed, but instead lead to the highway. Eugene and Federika could validly infer, by Modus Tollens, that the

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[4] On the similarities and differences between verbal directions and maps, see Tversky and Lee (1999).

[5] However, we do speak of propositions being true on them. For example, in Eugene and Federika's argument, we may say that it is true that on the map the street is closed (Malinas 1991).

map was wrong. The information it conveyed about the street was false. This means that the information conveyed with the help of the map was propositional indeed: it was truth evaluable and held entailment relations with other propositions. This could not be so unless this information was propositional (Perini 2005). Thus, the simplest way to make sense of what happens in this and similar cases is to conceive of at least some of the information conveyed by our use of maps as propositional.

So far, I have used as examples arguments where images are used to convey premises, but examples where images are also used to convey an argument's conclusion are not hard to find either. Consider the following one:

> 4. GEORGE AND HANNA
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> George and Hanna work at a petting zoo. The petting zoo sells small jars filled with food for the children to feed some of the animals. George and Hanna are in charge of labeling the jars. Instead of using words, they use pictures in their labels. Food for feeding sheep is labelled with a picture of a sheep, food for feeding llamas is labelled with a picture of a llama, and so on. They have several jars filled with assorted vegetables, fruits, crackers, etc. Some they recognize easily, but for others it is a little harder. At a certain moment, George picks up one of the unidentified jars and asks Hanna about its content. Hanna inspects its content and says "Let me see. It is mostly hay, but there are some vegetables in here too. I can see some chicory greens, kale, green pepper, red cabbage, and other stuff; but there are no rhubarb leaves or potatoes." So she takes one of the labels picturing a rabbit, sticks it on the jar and hands it to George.

Even though Hanna presents the premises of her argument verbally, she uses the rabbit picture to communicate her conclusion that the jar contained rabbit food. Her use of the picture is not much different from those of Eugene and Carly. Once again, we have a full proposition conveyed without the need of a sentence. As expected, there are many sentences Hanna could have used to convey her argument's conclusion—"This is rabbit food", "The jar contains rabbit food", "This food here is for rabbits", etc.—but no determinate one intended in her mind or grasped by George (at least, not before the argument's conclusion was successfully communicated). This means that images can be used in heterogenous argumentation to convey, not only premises, but conclusions as well.

4 Conclusions

I presume that these examples are sufficient to ground my claim that images can play a direct and substantial role in the communication of premises and conclusions in argumentation. So far, I have offered three simple and straightforward examples of what I have called in the introduction "heterogenous arguments", i.e. arguments where images are successfully used by one or more of the arguers to communicate their premises or conclusions. In them, Hanna, Eugene and Carly successfully managed to convey to their interlocutors genuine and complete arguments, without using full sentences for all their premises and conclusion. I have also defended the

claim that the communicative success of Hanna, Eugene and Carly is best explained by accepting the hypothesis that images were used to convey either full propositions or sub-propositional information that was essential to the communication of their arguments. I presume to have shown that my hypothesis deals with this kind of arguments better than the competing hypotheses that no actual (genuine, complete and fully propositional) argument was conveyed, or that one was conveyed indeed, but with the help of unpronounced sentences. Thus I conclude that the contribution images make to this kind of argumentation is substantial and direct: exploiting information from the context, they provide information necessary for the communication of the propositions that play the roles of premises and conclusion. Furthermore, they achieve this directly, i.e. without the need of verbalization.

My choice of heterogenous argumentation as topic may lead the reader to conclude that, in argumentation, images can help convey arguments only with the substantial assistance of words. Since the arguers in my examples exploit information conveyed both through words and images, nothing I have shown so far may disabuse this common misconception. For that, it would be necessary to show that arguments can be conveyed without the use of any word whatsoever. Even though I believe this to be true, proving the existence of such non-verbal arguments is planned for another occasion.

I have tried to keep my arguments neutral regarding any substantial theory of propositions, relying only on their least controversial properties, i.e., that they can (1) be true or false, (2) stand in entailment relations and (3) be linguistically conveyed. This minimal notion of proposition suits most current theories of propositions in philosophy of mind, philosophy of language, logic and argumentation theory. However, it is still inconsistent with theories like Suppe's (1977), Gaskin's (2008) and King's (1996), according to whom propositions themselves are linguistic (or language-dependant) entities. Yet, I take it that if I have succeeded in showing that, under a non-linguistic conception of propositions, these can be conveyed with the help of images just as they can be conveyed in a purely linguistic fashion, this should be taken as an advantage of the traditional non-linguistic conception, against views like Suppe's, Gaskin's or King's.

There is also little agreement in current argumentation theory regarding how best to use the word "argument" and what sort of actions are involved in argumentation, yet it is clear that one among the main things we do when we engage in argumentation is the communication of what logicians (for example, Toulmin 1958; Copi 1961; Richards 1978; Areni 2002, and myself among others) traditionally call an "argument", i.e. a series of propositions playing the roles of premises and a conclusion. There is raging controversy on the issue of whether this is all there is to argumentation or not. Those (like Walton 1990; Tindale 1999; Johnson 2000; van Eemeren and Grootendorst 2004; etc.) who adopt a dialectical or rhetorical perspective usually (and, in my opinion, correctly) take argumentation to be a more complex social activity. Nevertheless, most argumentation theorists still agree that the conveying of premises and conclusion is at least a minimal requirement for argumentation to take place.[6] Thus, for the purposes of this paper, I have focused

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[6] For an exception, see Prakken (2011).

only on the role of images (and words) in conveying the premises and conclusion that constitute what Blair (1995) has called an argument's illative core. There might be more to argumentation than this, so it is still worth saying a little more about how images can play a similar substantial role in the rest of the argumentation process. Once again, examples are not hard to come by. When the British newspaper the Daily Mirror accompanied its article against the war in Iraq in 2003 with a crossed picture of George W. Bush, for example, the communicative role of the aforementioned image was not to help convey the paper's argument against the war. It was not a mere ornament either. Instead, it signaled against whose claims was the argument directed. The image played no direct role in conveying premises or conclusion, but helped the newspaper communicate something about the argument itself: whose claims it was directed against. Furthermore, it achieved this directly, without the need for any translation into words. For another example, take a variation on George and Hanna's example above. Suppose that Hanna had verbally expressed the conclusion of her argument and it had been George who actually slapped the rabbit label on the jar. In such a case, it seems to me that we can say that George expressed his agreement with Hanna through the use of the rabbit picture, and not through words. Cases like these show that, even if argumentation is more than just the communication of premises and conclusions, images can still play an integral role at different stages of the process. The images in the examples here presented do not merely illustrate or accompany verbal argumentation. They contribute directly and substantially to the argumentative process.

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