INFERRING FROM COMICS: A MULTI-STAGE ACCOUNT

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INTRODUCTION

In 1948 Claude Shannon and Warren Weaver proposed their famous model of communication based on the coding and decoding of information. This so-called code model of communication predicted that in an environment devoid of much interfering noise, information can be packed, as it were, transmitted, and retrieved without much informational loss. However, the development of pragmatics, especially cognition-centred pragmatics, has made us aware that what is coded in human communication (spoken utterances, written texts, nonverbal behaviour, images...) highly underdetermines the information that the sender actually intends to communicate, that is, coded messages are far less informative than the thoughts that the sender really wants to communicate with them. Within the more appropriate inferential model of communication, it is claimed that although coding is indeed necessary in communication (we do need utterances, written texts, etc. to transmit information to one another), it is inference that plays a major role in transforming the schematic coded messages into fully satisfactory interpretations.

Needless to say, with this inferential model of communication we introduce an element of unpredictability in human communication which was previously absent. Unlike the stable transmission of information predicted in the code model, we now picture addressees as investing cognitive resources in selecting the most appropriate interpretation from a range of possible interpretations that the same coded message can have in a certain context. Inference is, precisely, the cognitive resource that human beings use to fill the gap between what is coded (e.g. an utterance) and what is interpreted.

The study addressed in this paper deals with the readers’ inferential activity while reading comics. The analysis of comics undertaken in this study will reveal and make us more aware of the extent to which readers rely on inferential resources when attempting to transform the verbal-visual
information coded on the pages of the comic into cognitively relevant interpretations. The analysis is organised in five main stages which are normally regarded as successive, but there is also a number of sub-stages which can also be isolated and are often carried out by the reader’s inference but not necessarily in sequential order. The analysis will be illustrated with panels from Nabiel Kanan’s graphic stories Exit (published by Taxi Comics in eight issues, 1993) and Lost Girl (published by Comicslit, 1999)

1. STAGE 1: GRABBING A COPY OF THE COMIC

Inferential activity starts a long time before the readers actually get hold of a copy of the comic which they want to read. On many occasions, readers who are faithful to an artist (henceforth referred to as “author”) or a particular style of comic, will have acquired a personal mental storage of specific information regarding the story (especially if we are dealing with stories which are continued in successive issues, but not in the case of graphic novels), the visual features of the main characters, etc. This background encyclopedic knowledge is a preliminary context against which the verbal and visual information of the new comic will be assessed. The new visual and verbal information which interacts fruitfully with the readers’ background knowledge will be relevant. Information from comics can also be relevant if it reinforces previous assumptions, or contradicts and leads to the erasure of these assumptions.

In this sense, processing the cover page turns out to be an essential sub-stage at this preliminary phase in the interpretation of comics. Readers will either recognise a familiar layout of a comic cover from the range of comics on display in the shop, or will be attracted by the design, colour, or letter type of an unfamiliar, not previously read comic. In any case, the reader’s inference will turn this visual information into mental assumptions on whether the comic is worth buying and/or reading. For instance, Saraceni (2000, 2001) analysed the cover page layout of a famous graphic novel: Maus, by Art Spiegelman (1987) and how the verbal and visual elements of the page are carefully designed to generate cognitive effects in the reader through the inference and recovery of many assumptions about Hitler’s time, including features such as the visual iconicity of letters (the “SS” on the

\[1 \text{ I would like to thank Nabiel Kanan for kindly giving me permission to reproduce panels from his outstanding work.} \]

\[2 \text{ As pointed out in Yus (2006), within cognitive pragmatics (especially relevance theory, see Sperber \& Wilson, 1986) context is a dynamic, mental entity made up of a sub-set of the person’s assumptions about the world and it is this subset that is accessed in the search for optimal interpretations of new coded information.} \]
cover resembles the infamous German “SS” typeface; besides, the typeface is coloured in red, connoting the letters visually with blood) and the overall visual information (a Hitler-like face of a mouse, a swastika, terrified human-looking mice).

2. STAGE 2: IDENTIFYING THE PAGE LAYOUT

The next stage concerns page layout. Normally, the page will be divided into a number of panels separated by the gutter (see heading 4 below). This is the “unmarked” (i.e. non-connoted) version of page layout which, given the default organisation of panels, will arouse little interest in the reader and lead to little inferential activity beyond visual recognition. However, comic authors can play with the settled conventions in order to force a supplementary level of inference devoted to page layout. Some authors, for instance, tend to use the page as the basic unit for sequencing the story (e.g. the so-called meta-panels), while others do use panels but in very innovative ways (see Yus, 1997: 166f).3

Similarly, the reader will expect a left-to-right, top-to-bottom direction of reading, but it can also be altered in order to achieve additional or striking effects demanding, at the same, additional inferential resources. Lastly, the fact that the page on the left and the page on the right are simultaneously present in front of the reader can have consequences on how the story is processed and the amount of inference devoted to each panel within these pages. Barber (2002) mentions one example of how the panels in two successive pages can be inferred differently depending on which page they are found (odd number or even number). On the first page the author uses sixteen small panels to depict how a villain is ready to chop a woman’s head off with a guillotine: tension is built up by the close-cropped images. The reader wonders what will happen next. Of course, by turning the page, the reader sees how a superhero comes to the rescue in the nick of time, smashing a window inside a panel which takes up the whole page. This is indeed effective, but only if the first page is odd and the second is even. If these two pages were laid out in the opposite arrangement, the tension would have diminished, because the reader would have inevitably noticed the page

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3 Will Eisner, quoted in Duncan (2000) proposes an eclectic approach to panels or pages as the semiotic unit of comics: “pages are the constant in comic book narration… Because the groupings of action and other events do not necessarily break up evenly, some pages must contain more individual scenes than others. Keep in mind that when the reader turns the page a pause occurs. This permits a change of time, shift of scene, an opportunity to control the reader's focus. Here one deals with retention as well as attention. The page as well as the panel must therefore be addressed as a unit of containment although it too is merely a part of the whole comprised by the story itself.”
on the right first (the smashed window, the hero), since that image is much bigger and more dynamic, drawing attention to itself immediately.

3. STAGE 3: FOCUSING ON THE PANEL

Regardless of the debate on whether the page or the panel is the basic unit of comic sequencing, there is no doubt that the panel has always been an essential element in the discourse of comics. In this heading we will focus on the role of inference in extracting the most relevant information from the coded verbal and visual input which the reader can find in individual panels, while the next stage (heading 4) will be devoted to inferring information from a sequence of panels. To this end, the analysis will be divided into several sub-stages in the processing of panels, which are not meant to be successive. As will be stressed below, two aspects are essential in the processing of the information contained in panels: the blend between verbal and visual sources of information, and the continuum of iconic and symbolic qualities in both types of information: verbal and visual.

3.1. Sub-stage: Seeing and processing visual elements in the panel

If we assume a modular view of the mind such as the one envisaged by Fodor (1983), the mind has a central processor of information that is fed, as it were, with information by a number of mental modules which manage one specific type of information and send it to the central processor in order to be processed inferentially. One important module is the language module, in charge of identifying and sending verbal (and grammatical) input to the processor, which then turns it into fully contextualised interpretations. The linguistic input is always limited and unsatisfactory in the specific context in which it is received by the processor, and therefore there is always an amount of inference involved in obtaining the right interpretation.

Another important module is the perceptual module, in charge of feeding the central processor with visual information from the surrounding world. Needless to say, the readers of comics constantly identify the visual information in the panel and then process it in the most appropriate way and, on paper, it seems to be a rather straightforward, automatic activity involving little inference, merely intended to perceive visual elements and identify them as iconic signs related to their referents. These referents can either be the prototypical ones resembling the perception of these images in the real world (e.g. a panel depicting drawings of trees, houses, cars, etc.), or they can refer to entities that are only valid within the possible world in which the story of the comic takes place (e.g. drawings of spaceships or rare creatures).
However, inference plays a more important role in the apprehension of visual information than it appears to play. Perception is not as automatic as it seems to be, but is always mediated by the person’s background knowledge, expectations and assumptions about the world (actual or possible) within which images are processed. Whatever the visual input, inferential hypotheses have to be made in order to match iconic information and their referents. Gombrich (quoted in Friedman & Stevenson, 1980: 247) was right in pointing out that a picture suggests the environment by presenting a relational model that is in agreement with the relationships existing in the environment. Pictures, as a rule, lack pieces of information about their referents and sometimes offer contradictory information. Therefore the viewers of a picture must generate and test hypotheses regarding the meaning of the picture before they can discover the correspondence between the pictorial and the real. It can be stated that in order to process visual information satisfactorily, readers are constrained by their biologically-rooted tendency to select the most relevant information from visual stimuli. Different readers will, for example, fix their eyes on the panel focusing on different visual elements, although on paper some default “visual areas of interest” can always be isolated in the panel. Indeed, ever since the technique to measure eye direction was developed, it became clear that people do not pay the same attention to the same items in the picture and do not follow the same order during perception, and this is because all pictures are perceived against very personal encyclopedic knowledge and expectations influencing perception.

Take, for instance, the famous comic book hero Spiderman. In its long history it has been drawn differently by several comic authors. Therefore, readers who are used to a particular kind of drawing of Spiderman will inferentially check their prior knowledge and expectations of this kind of drawing while they are seeing the new visual information on Spiderman in the new comic, which will reinforce or contradict that prior knowledge and

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4 Recently, Watson et alii (2004) have demonstrated the important role that the mind plays in influencing perception. It is commonly assumed that vision begins with the formation of an image on the retina, which in turn stimulates nerves to send signals to the brain. The brain’s visual cortex then interprets these messages. But signals in the visual cortex also travel in the opposite direction, but much less was known about their function. These authors have proved that the feedback signals carry information about what we expect to see and may shape what we actually observe.

5 Furió (2002: 134f) cites two relevant analyses: One by G.T. Buswell (1935), who showed how eye movements are irregular and hence non-smooth and that there are areas of interest in every picture, but the order in which the eye focuses on these areas and the time spent perceiving them differ from one person to another. And another study by A.L. Yarbus (1967), who obtained similar results and at the same time acknowledged the role that expectations play in the areas on which the eye focuses. The more supposedly relevant information that the object contains, the more attention that the reader will pay to it.
those expectations. Similarly, particular ways of representing the surrounding
world led in the past to rules of representation that, regardless of their iconic
quality, influenced the acceptance or rejection of certain pieces of art. This
was the case, for instance, of Durero’s famous *Rhinoceros* (1515), that was
only slightly iconic but highly faithful to the norms of representation in the
sixteenth century.

3.2. Sub-stage: Processing visual and verbal sources of information

Comics are full of visual content, but the inherent semiotic quality of
comics is found in the relationship between the processing of the visual and
the verbal information contained in the panel. The reader of a panel often
faces different speeds in the transfer of information: a visual instant of the
image versus the (often longer) narrated caption or dialogue, plus the global
perception of images versus the left-to-right reading of texts (see Horn,
1998: 75-80; Arozena Expósito, 1999: 144; Duncan, 2000; Horrocks, 2001;
Cohn, 2003), which demands an adequate inferential response in the reader to
maximise the relevance of the information simultaneously coming from two
rather different ways of coding information and to find the intended
interpretation, which sometimes is not deducible from image and text taken
separately, but from their combination in a specific context of reading.8
Pamminger (1998) shares this opinion when he states that

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8 Panels are typically regarded as portraying a “frozen instant” of the action, but this is not true of all
images in the panels. In fact, as Saraceni (2003) correctly points out, “it is very rare for a panel to
represent only an instant of the story (…) The reader of comics considers the panel as a portion of
the narrative, where something actually takes place and takes time”.

7 In his famous study on comics, McCloud (1993: 153-155) provides the following classification of
word-image relationships: (1) *word specific* (pictures illustrate but the main meaning is provided by
the text); (2) *picture specific* (words only provide a “soundtrack” to a visually told sequence); (3)
*duo-specific* (both words and pictures send the same message); (4) *additive* (one form amplifies or
elaborates on the other); (5) *parallel* (words and images follow non-intersecting discourses); (6)
*montage* (words are treated as part of the image itself); and (7) *interdependent* (images and text go
“hand in hand to convey an idea that neither could convey alone”). This is the kind of relationship
which can be exploited in comics to provide the highest cognitive reward for the reader.

8 Take, for instance, cartoons. At the beginning the images were only a redundant illustration of a
humorous interpretation which could be derived from the text only. By the 1920s, cartoonists
discovered that cartoons were funnier if humour arose from a combination of word and image, to
the extent that the one ‘explained’ the other. As Harvey (2001: 80) corroborates, “in this form, gag
cartooning achieves its apotheosis when neither the picture nor the words have humorous meaning
alone. The picture sidles into a reader's consciousness as a kind of visual puzzle, meaningless until
reading the caption 'explains' it. The picture likewise 'explains' the caption”.
It is this curious mixture of simultaneously present pictures open in all directions and a strictly linear text structure that requires a fairly deep engagement that makes comics a fascinating, complex hybrid system. Two modes of reading, enabled by two autonomous symbolic systems, are in conflict here: the linguistic principle insists on separation, while the pictures want to unite. Of course, reception of such a hybrid form of representation cannot be uniform. The recipient must continuously switch between reading and observing. But even as an observer s/he is also divided, oscillating between a defined, orthodox movement along the panels and an infinite, composite panoramic view.

Besides, within the textual mode of communication, authors of comics have to accommodate dialogues spatially on the panel so as to fit the way texts are read: left-to-right and up-to-down. The reader will expect this organisation of dialogues and devote very little mental effort to determining the order of, for example, dialogues such as the ones depicted in figure 1, where the balloons are inter-connected to portray the normal (oral) flow of face-to-face dialogues in a time continuum.

It is also important, at this sub-stage, to underline the fact that the reader has to infer the exact location of images and text within the symbolic-iconic continuum. Images are, of course, typically iconic, whereas text is basically
symbolic. But in comics the readers can find highly symbolic visual signs (e.g. lines to show movement, a light bulb to show a character’s idea) and highly iconic verbal signs (e.g. text that is visually manipulated in order to achieve specific effects; see heading 3.3 below). Saraceni (2000: 57) calls this phenomenon *semiotic blend*, with two main attributes: (a) stylised comic drawings possess a high degree of symbolicality which renders them semiotically close to language; and (b) comic writing is, because of the importance of its graphic aspects, a very iconic form of written verbal language, and therefore semiotically close to pictures. Figures 2 and 3 are good examples of this semiotic blend. Figure 2 shows how very little variations in the lines for the eyes can convey several different expressions. We are indeed on the iconic side of the continuum, but closer to the symbolic end (after all, lines are not inherent visual qualities of eyes). Even closer to the symbolic end, we can place other images such as (conventional) visual metaphors (e.g. “log with a saw” meaning “person sleeping”) and variations of panel and balloon outlines (more on this in the next heading). Figure 3 depicts an instance of the other end of the continuum: text that can be used with iconic connotations. We are, of course, still able to read the text as a verbal sign (“nowhere”), but the word is used with a greater iconic significance.

![Figure 2. Lost Girl (1999), p. 44, © Nabiel Kanan.](image)

9 See Arzena Expósito (1999: 40f) for an account of different artistic movements which, to a greater or lesser extent, have used texts as one more iconic element in the work of art, that is, texts whose visual quality ends up being even more important than the message coded with them.
3.3. Sub-stage: Checking symbolic (verbal/visual) information

Comics are full of symbolic information that readers, through repeated readings of comics, have stored in their minds as “stereotypes” (both verbal and visual) and which, given their stable signifier-referent relationship, demand very little processing for their optimal interpretation (although some of these symbolic stereotypes can no doubt be used with connotative, non-coded purposes demanding more inferential activity).

The shape of the panel outline is one example of a coded symbolic element in comics that is easily processed by the readers. Taking the straight line and the square shape of the panel as the unmarked (i.e. default) form, the authors can use other outlines in order to connote the panel with additional meanings, but most of them are coded in the particular genre of comics and the reader normally devotes very few cognitive resources to process them.
Another symbolic information has to do with balloon line shape. Again, the rounded or square balloon with a continuous line seems to be the unmarked, default way of separating the characters’ dialogues from the rest of the panel, with other symbolic ways of connoting the line that are also coded in the discourse of comics, hence demanding little inference from the reader. However, although there would appear to be a one-to-one symbolic relationship between balloon line shape and its meaning, Gauthier (1986) demonstrated that it is context that actually aids the reader in the identification of these marked outlines of balloons, since the same marked (connotative) line can be used with several different meanings and therefore it is not uniquely related to its symbolic referent. As a consequence, the inferential process carried out in order to process balloon line shape is not simply to match these outlines automatically to their prototypical –coded–referents but, rather, a fast inferential activity matching balloon line shape to referents in the specific contexts where they appear. For instance, a zigzagging line usually conveys the sound coming from a speaker. The reader has no difficulty in identifying it as such, but the same line can also be used
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To convey a character’s anger, for instance, and therefore a matching between balloon outline and surrounding context is necessary.

There are other features of comics that are worth mentioning regarding their stereotypical quality in the way they are systematically used in this kind of discourse. Two of them concern the communication of time and movement, and both are related to the need to move beyond the frozen image of the panel and towards an inferential apprehension of the sequential quality of the story (see heading 4 below).

Time can be easily communicated through captions (e.g. “later”, “the next morning”, etc.) or visual images (e.g. a drawing of a clock). But there are other subtler ways of connoting the story with the flow of time, which demand an additional inferential activity by the reader. One of these techniques is to repeat the same drawing in several panels. In this case, the readers take full responsibility in their inference of the amount of time that the author intends the reader to grasp from the repeated images.

Another subtle way of visually connoting the story with the flow of time can be found in figure 4. The reader is expected to infer that the pregnant woman in the first panel is not simply a “visual filler” of the panel (that is, a plot-irrelevant image inside the panel), but an essential visual element connoting the next panel with a more or less measurable flow of time. With the aid of this female character, the reader will be able to infer that the main character took the train and returned several months later.

Figure 5. Exit, issue 5 (1993), p. 13, © Nabil Kanan.
There are also stereotypical ways of communicating movement inside the apparently frozen images drawn in the panel. Friedman & Stevenson (1980: 227-230) propose four ways of representing movement in pictures, and all of them are applicable to the depiction of movement in comic panels: (1) single viewpoint, single moment: it shows a momentarily frozen environment, as seen from one point of view. Hence, representations showing a figure at a moment in which its position differs substantially from an at-rest position are frequently used by comic authors, as in figure 5, in which the characters’ positions depicted are impossible in a motionless situation. This is particularly effective considering that the human brain is biologically hard-wired to detect motion not only in the environment but also in this kind of bidimensional “frozen” medium; (2) multiple viewpoints: a selection of the changes occurring with time is recorded as multiple images; (3) metaphor: aspects of the environment that are unlikely to occur together in the real world may be represented side by side in a picture so as to suggest movement (e.g. steam to suggest the moving car which, in reality, does not leave any trace); and (4) abstract representations (e.g. lines with arrows). Other symbolic resources to convey movement include the repetition of the object or character in the same panel.

Finally, conventional visual metaphors should be mentioned as visual signs that are closer to the symbolic end of the symbolic-iconic continuum. Although they are still iconic, their one-to-one relationship with their referents makes them easy to process and closer to the symbolic end. For instance, a frequent resource for comic authors when they aim at communicating the characters’ anger (which often involves the use of taboo language) is what was labelled iconic euphemisms in Yus (1997). Instead of

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10 Freyd, quoted in Blakemore and Decety (2001), conducted a series of studies showing that still photographs that capture an object in the process of motion induce a perception of movement. When informants see static images that convey dynamic information, such as an athlete in the posture of throwing a ball, the brain region that is specialised for processing visual motion -the occipito-temporal junction- is activated. By contrast, images conveying non-dynamic information, such as a person sitting in an armchair, do not activate this area. In other words, the region specialised in visual motion processing is activated by implied motion from static images. The conclusion is that “the brain scores internal representations of dynamic information, which can be used to recall past movements and anticipate future movements, even from very partial visual information” (Blakemore and Decety, ibid).

11 Therefore, the depiction of several heads simultaneously but one single body for the same character should lead to the reader’s inference that the character is moving his or her head. On paper, there seems to be no difficulty in this kind of inference but there is cross-cultural evidence suggesting that experience with pictures plays a role in the development of the ability to interpret correctly pictures with multiple body parts (typical of comics). For instance, in a study by Duncan, Gourlay and Hudson (quoted in Friedman & Stevenson, ibid.: 238), when shown a picture of a human being with three heads to denote movement, only 3% of the rural Zulus and 14% of the rural Tsongas thought that it depicted a head in movement.
the taboo words that would be uttered in the context of the story where this euphemism appears, the author opts for the symbolic form of visual depiction of the unacceptable verbal taboo by means of snakes, skulls, dark clouds, etc.

3.4. Sub-stage: Distinguishing types of text (captions versus dialogues)

It is also important for readers to distinguish between reader-oriented communication (the communication between author and reader through the comic) and character-oriented communication (conversations between characters in the narrated story). Both sources of information are usually marked clearly on the page (separate areas in the panel) but the most relevant information may also lie in inferring the communicative implications of combining the information from these two verbal sources and not in their information taken separately. For instance, a dialogue between two characters may not be inherently ironic, but the reader may find it ironic in the current context of interpretation at the level of reader-oriented communication. This is also the case of texts embedded in connotative visual contexts (see next heading).

3.5. Sub-stage: Assessing intentionality in the visual information of the panel: visual explicatures and visual implicatures

At every stage of the creation of a comic, the author has to make choices in two main areas of visual communication: firstly, what instant of the action is worth drawing and, secondly, which images or portion of images are worth framing inside the panel, and which ones should be kept out of frame. In any case, the reader has to infer the author’s intentionality in selecting a particular image, the intentionality in showing a particular part of the image inside the panel, and also infer the portion of the visual world that was not selected but may have important implications for the plot of the comic. Besides, often the inferential processing of the previous and/or next panels reveals what portion of the environment had been left out of frame and why. This is what can be seen in figure 6, where the female character is looking at a non-framed area of the room, but the reader already knows, through the processing of the previous two panels, that she is looking at the two male characters.
This point can be illustrated with the typical strategy of *zoom*, which comic authors use in a similar way to its use in films. Zooms reveal the author’s overt intentionality to underline some portion of the visual environment in order to achieve some effects in the reader. Normally, when readers notice a zoom in the visual narrative, they immediately infer that this focused element is important and deserves additional inferential activity. On many occasions, readers do not have to devote too many cognitive resources to determine the importance of these zooms, either because of the author’s drawing technique\(^{12}\) or because the short-term knowledge accumulated in the reading of the previous pages or panels aids them at this task. On other occasions, though, readers find it difficult to trace the underlying intentionality (see Watts, 1989; Yus, 1997: 220f). For instance, in figure 7 the reader can see a repeated zoom of the genital area of the male character while chatting with his female friend. The author has underlined —via zoom— this part of his body, and the reader has to make inferential hypotheses on the reason: Is it because the male character is sexually aroused and attracted to the girl? Is it because the author is showing the girl’s gaze at that particular

\(^{12}\) As Saraceni (2000: 52) acknowledges, “pictures are always spatially structured so as to precisely focus the viewer’s attention more prominently on certain details rather than others (…). On the particular level of comics, the stylisation of the pictures prevents the readers from focusing their attention on unnecessary details. In fact, one of the most common features of this type of pictures is, for example, the extreme simplicity of the elements that should receive the focus of attention”.
area of the boy’s body? Unfortunately, the author is not with us to clarify that.

We have seen how a sub-part of the general inference devoted to obtaining the intended interpretation of the visual content of the panel lies in determining the author’s underlying intentionality. In a way, this is an inferential activity which can be explained by setting parallels to the comprehension of verbal content. In pragmatics, specifically within the relevance-theoretic approach (Sperber & Wilson, 1986/95; see Yus, 1998 and forthcoming), it is claimed that intentional verbal communication (e.g. utterances) can yield different interpretations depending on the quality of the context that is necessary for its processing. Upon detecting intentionally transmitted coded language, the addressees set their inferential resources in motion in order to access a suitable context that aids in obtaining the most relevant interpretation. These interpretations can be either explicit or implicit.

![Figure 7. Exit, issue 1 (1993), p. 18, © Nabiel Kanan.](image-url)
Explicit interpretations (which Sperber & Wilson, ibid., call explicatures), are contextualised literal interpretations of an utterance or text. They are ‘developments’ of the coded verbal input, although on many occasions a lot of inference has to be devoted in order to access the right explicature. Needless to say, the same utterance can have many explicit interpretations depending on the context in which it is uttered. On the other hand, implicit interpretations (called implicatures) are wholly inferential; they are not developments of the utterance or text and have to be recovered with the aid of context and the information from the verbal input. For example, in conversation (1b) below, given the context (1a), B’s reply communicates both the explicature (1c) and the implicature (1d).

(1) a. [A and B are suggesting things to do on a Saturday morning].
   b. A: How about playing tennis?
      B: It’s raining.
   c. Explicature: “It is raining [at the time when we would be playing tennis] [at the location where we can play tennis].”
   d. Implicature: “We cannot play tennis.”

We can say that (1c) is more or less a contextualised development of B’s reply; but nothing in B’s reply contains the interpretation (1d), and hence the hearer has to derive it with the aid of context. Of course, in this example the interlocutor can surely arrive at (1d) without much inferential effort, but on other occasions it is much more difficult. Another example of the explicature/implicature distinction is given in (2) below:

(2) a. [A and B are in a sitting-room on a hot summer afternoon].
   b. B [to A]: “It’s hot in here”.
   c. Explicature: “it is hot inside the room where we are now”.
   d. Implicature: “Open the windows” (or, in a different context, “switch on the air conditioning”).

As was claimed in Yus (1997: 208f), this terminology can also be applied to the visual information contained in the comic panels. At every stage of interpretation, the reader has to make inferential hypotheses concerning the role that images play in the comprehension of the panel (and of the story as a whole), that is, the reader has to infer whether the visual information contained in the panel has a purely denotative purpose (e.g. visual information as a “filler” of the environment where characters interact), in which case it would be a visual explicature, or it has a non-coded (and wholly inferential) connotative meaning called visual implicature.
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former is easy to process: the reader simply identifies the visual information in the panel and matches it to the most appropriate referent either in the real world where we live or in the possible world of the comic book. The latter, on the contrary, is fully inferential and has to be obtained with the aid of context. A good example is non-coded (i.e. non-fossilised) visual metaphors: beyond the perceptual adscription of their referents, a further, fully inferential activity is required in order to grasp the intended metaphoric interpretation, which is never encoded in the images but in the mapping of some attributes of one source image onto the target image (Yus, 2005).

Needless to say, the more implicit the interpretation of the image is, the more open it is to personal (and maybe unintended) interpretations for which the reader takes full responsibility. Saraceni (2003) provides an interesting example in a series of panels portraying a couple celebrating their anniversary:

(3) Scene 1: The couple is sitting, watching TV. She is wearing a striped jacket. He is wearing striped trousers and a checked shirt. The sofa where they are sitting is also striped, as well as the TV.

Scene 2: The couple are in bed. She is wearing striped pyjamas; the wallpaper is also striped. She gets up, looks at her husband sleeping, goes to the window (which has a Venetian blind), pulls down one of the strips of the blind and looks out.

A reader of these panels may well process all of this information, identify the prototypical referents of all the iconic images (in terms of visual explicatures) and follow the story as narrated verbally by the author or the characters. But for Saraceni these scenes contain a deeper symbolic interpretation that cannot be simply inferred denotatively from the images but requires a connotative layer of processing: All the striped lines in the panels represent the tedious monotony in the couple’s relationship and since the Venetian blind is also drawn as a series of straight lines, the girl’s bending of the strips of the blind “represents a break in the mechanical regularity that pervades the relationship between the two characters. Also, this break allows the girl to gaze outside and this acquires an extra significance: all the straight lines inside can be seen as the bars of a cage in which she feels trapped” (ibid., 32).

The important aspect of this explicature/implicature interface is that several possible interpretive outcomes can be isolated. Often, the reader is only expected to identify the visual content as a “filler” of the panel (visual explicatures) without a further connotative layer. In figure 8, two characters are walking in a street in London. Most readers will identify the typical
scenario (English-looking taxis, the parliament, the typical double-decker bus) and conclude that the intended referent is indeed London, but no more inferential conclusions seem to be required. In the same way (but at a slightly more connotative level), in figure 9 the first panel seems to be a visual filler of the panel, but it ends up being a drawing of the physical environment made by one of the characters. The author plays with visual identification and his control over in-frame and out-of-frame visual content but there seem to be no further connotations involved.

Figure 8. Exit, issue 3 (1993), p. 6, © Nabiel Kanan.

At other times, the reader is expected to devote more inferential resources and reach a more connotative level of interpretation (visual implicature). It is interesting to note, at this point, that the readers may reach an unintended level of inferential processing of the visual content of the panel. They may grasp the denotative level of visual content and stop processing there, without accessing the intended visual implicatures (a case of intended visual
implicature turned unintended visual explicature) or extract conclusions or connotations (implicatures) were not predicted by the author, who only expected the reader to identify the referents of the visual content of the panel (a case of intended visual explicature turned unintended visual implicature)\(^13\).

Another aspect that has to be addressed at this sub-stage is the relationship between visual content and verbal content in the panel. It has already been mentioned that it is precisely the blend of visual and verbal information that makes comics such a unique medium of communication. For instance, visual information can aid the author in the portrayal of a character, working as a background context upon which the character’s verbal information is contrasted. In Yus (1997: 210) several examples are provided, in which the background visual context contradicts the character’s utterances and is useful to get a better impression of the characters:

\[^{13}\text{Possibilities include the extraction of wrong connotative meanings (alternative visual implicature) and also, but more unlikely, the wrong matching of visual content and referents (alternative visual explicature). For an account of these and other possibilities of misunderstanding but centred upon verbal communication, see Yus (1999).}\]
### Table 1

<table>
<thead>
<tr>
<th>THE CHARACTER'S UTERANCE</th>
<th>IN THIS VISUAL CONTEXT</th>
<th>PRODUCES THIS IMPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus driver: “Are you doubting my driving ability?”</td>
<td>Passer-by crashed into the front of the bus.</td>
<td>The bus driver is a bad driver.</td>
</tr>
<tr>
<td>Old lady to her cat: “We’re running low on cat food again”.</td>
<td>Cupboard full of cat food cans.</td>
<td>The old lady is senile.</td>
</tr>
<tr>
<td>Journalist: “It’s not fair. Nothing ever happens in this town”.</td>
<td>Fire in a building in the distance, people jumping from the windows.</td>
<td>The journalist is a disaster.</td>
</tr>
<tr>
<td>Old lady on a bus: “A woman of my age having to stand”</td>
<td>A bus full of empty seats.</td>
<td>The old lady is senile.</td>
</tr>
<tr>
<td>Art critic commenting upon a picture in a gallery: “This is more like it!”.</td>
<td>The second picture is almost the same as the first one (the one he disliked).</td>
<td>The art critic is a disaster.</td>
</tr>
</tbody>
</table>

At other times, visual content aids in the interpretation of verbal content and *vice versa*. Barthes (1977) coined the term *anchorage* to account for this kind of image-text relationship. Anchorage is typical in certain discourses such as newspapers and students’ books at school. In comics we can also find this kind of relationship that decreases the readers’ processing effort when trying to infer the information from the panels. More generally, visual information in human communication is essential to disambiguate the potential meanings of verbal utterances, as in figure 10, where the female character’s nonverbal behaviour helps the other character (and the reader) to infer that she is joking.

The information from the characters’ nonverbal behaviour can also contradict what they are saying. In figure 11, the visual information from the character’s face (she is crying) is the aid that the male character needs in order to conclude that she is lying.

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14 Actually, if we also bear in mind the intentional/unintentional continuum, four cases can be isolated: (1) an unintentional nonverbal behaviour reinforces the information from verbal communication (e.g. a person shakes and his hands sweat while he is saying “I am nervous”); (2) an unintentional nonverbal behaviour contradicts the information from verbal communication (e.g. a person shakes and his hands sweat while he is saying “I am calm”); (3) an intentional nonverbal behaviour reinforces the information from verbal communication (e.g. a person puts her index finger on her mouth while saying “Be quiet!”); and (4) an intentional nonverbal behaviour contradicts the information from verbal communication (e.g. a person winks overtly while saying something ironic).
3.6. Sub-stage: Assessing intentionality in verbal content: Relevance-driven interpretations

From the previous headings we can conclude that inferring the right interpretation of verbal content and visual information is not a straightforward mental activity but an effort-demanding inferential task.
intended to derive conclusions from incomplete verbal and visual input. As commented upon above, relevance theory (Sperber & Wilson, 1986/95) claims that what people say on most occasions underdetermine what people really intend to communicate, and the same can be said about visual content and human nonverbal communication.

The examples in (4) below show how, in specific contexts, the information “literally” coded in the utterances is insufficient to account for their intended interpretations (provided in square brackets) and hence the addressee’s inference is needed in order to turn the schematic input into relevant interpretations:

(4)  
   a. [Customer to a waiter] This steak is raw!  
      [This steak is undercooked].  
   b. [Mechanic to a client] It will take some time to fix the car.  
      [It will take longer than it usually takes to fix the car].  
   c. She got the keys and opened the door.  
      [She got the keys and then opened the door with those keys].

Similarly, readers of comics have to infer the intended interpretation of both the narrative text (captions) and the characters’ dialogues in order to grasp the story correctly. For instance, the words *dump*, *free* and *flat* can acquire many possible meanings depending on the context in which they are uttered. The reader of (5) and (6) below will adjust the inference of these words in their particular context and derive their correct meaning in the dialogue between the characters:

(5) It’s a scorcher today –even for mid-June. Y’know I can’t believe we’ve finally left that dump. I mean I know we’re probably all going to colleges or universities in September but it feels weird being free (Exit, issue 1, 1993, p. 5).
(6) Daughter: Uh… I think I might walk over to that supermarket we passed up the road. I need some new batteries. The ones in my walkman are flat. I’ll meet you back here in a bit, okay?
   Father: (smiling) It’s that music you listen to that’s flat, not the batteries (Lost Girl, p. 3).

On some occasions, the author’s desire to communicate the right interpretation of the text can be facilitated with a typical resource of comics: to *iconise*, as it were, the text by connoting it visually with additional shades of meaning.
4. STAGE 4: MOVING ON TO SUBSEQUENT PANELS

One of the most inherent aspects of comics is the gutter, that is, the space between the panels that contains elliptical information which the reader has to infer with the aid of context. Even though the gutter is often a physical area of the page that separates the panels, it is more a conceptual term, since even gutter-less comics also demand from the reader the recovery of elliptical information between panels. Needless to say, the amount of information that the reader has to recover depends on the story narrated and how it is narrated. Sometimes there is little absent information in the transition of two panels, whereas on other occasions there is a huge amount of information that the reader is forced to recover. Besides, an inevitable consequence of the existence of gutters is that the more elliptical information the gutter contains, the more responsible the reader is in the recovery of the missing information. Saraceni (2000: 126) corroborates this idea when he states that ‘often the reader does not need to engage in any speculations as to how to ‘fill the gutter’, which can be said to be an unconscious and almost instinctive psychological process. At other times, however, little or complete absence of explicit markers of relatedness cause the necessity for the reader to actively contribute to the logical sequence of what would otherwise seem to be only a spatial left-to-right sequence’.

Several types of “panel transition” have been suggested in the bibliography available\textsuperscript{15}, but the important aspect for us is the role that inference plays in the recovery of the missing information and how the reader will always attempt to find coherence in the sequence of panels. The authors of comics normally facilitate panel transitions, relying on the reader’s inferential ability to reconstruct the missing elements. For instance, in figure 12 there is a series of panels whose transition is well designed, with panels that are related to each other, making the reader’s inferential task very easy: the reader will have no problem inferring that the character in panel 2 is leaving a party which takes place on the ground floor and is going upstairs.

\textsuperscript{15} For example, McCloud (1993) suggests the following: (1) moment-to-moment (in which a slight change of time is apparent); (2) action-to-action (in which an action is completed), subject-to-subject (in which the view changes between subjects within the same scene); (3) scene-to-scene (which “transport us across significant distances of time and space”; (4) aspect-to-aspect (which “bypasses time for the most part and sets a wandering eye on different aspects of a place, idea, or mood”; and (6) non-sequitur (“which offers no logical relationship between panels whatsoever”). Saraceni (2000: 128) re-elaborates on McCloud’s taxonomy: (1) moment-to-moment (complete repetition, all the elements of one panel are repeated in the next); (2) action-to-action (high degree of repetition, most elements of one panel are repeated in the next); (3) aspect-to-aspect (collocation, the elements of the two panels are belong to the same semantic space); (4) subject-to-subject (few elements of explicit relatedness, usually based on collocation); and (5) non-sequitur (no explicit markers of relatedness at all).
inside the same house; that the corridor in panel 3 is upstairs in the same house; that the open door in panel 4 is the same door as the one in panel 3; that the door which the character is opening is the same as the one in panels 3 and 4; and that the girl in panel 7 is inside the room which had the door open.

At other times, though, the reader is faced with authors of comics who do not facilitate the inferential task of finding coherence and narrative flow by inferring the elliptical material of a sequence of panels. For instance, in Beronà (2001: 37) there is an example of a comic by Peter Kuper (*Eye of the Beholder*, 1993). The reader finds a series of panels on the page that defy a correct inference of coherent panel transition, and despite trying hard to infer the possible link between them s/he ends up puzzled. Turning the page, the reader is provided with a page-sized meta-panel depicting a man developing a film. The reader then backtracks in his/her inference of the story and realises that all of these disconnected panels are photographs from a film which is being developed by that character.

5. STAGE 5: PROCESSING THE WHOLE STORY AND BUILDING UP BACKGROUND KNOWLEDGE

At this stage, the whole story will have been processed. The reader will have stored in his/her encyclopedic knowledge the relevant information obtained from the story narrated through the sequence of panels. Part of this knowledge refers to the characteristics of the fictional possible world in which characters and objects are portrayed and whose ‘existence’ is normally only possible within the fictional world of panel-based storytelling.

In the future, the storage of information inferred from the comic will be used by the reader as a preliminary context upon which the new information (from the same author, from the next issue of the comic, from the same kind of comics, etc.) will be assessed. Expert readers of comics will probably have a more detailed or deeper background knowledge than neophytes in the processing of this kind of verbal-visual form of narration. In any case, the reader’s inference when reading a comic never starts from scratch. We are, after all, inference-endowed animals who constantly learn from prior interaction with the world around us, a world to which comics also belong (and rightly so).
REFERENCES


