DTPl (map of Central America) is a schematic visual that provides the readers with information concerning the location of Nicaragua's national parks. There is no caption accompanying the map. Two-thirds of one page is devoted to one map which appears to have low ideational and interpersonal function. Its textual function is only to provide the physical location of the subject matter of the verbal text which makes this a low value visual.
5.3.2.4 Quadrant B visuals: Climate change

Examples

Climate chaos: model predictions for the increases in drought and flood conditions due to greenhouse gas emissions, for 1965 and 2050. By 2050, with a temperature rise of 4 °C, severe droughts (red) would become frequent in the tropics and middle latitudes.

Figure 5. 18 CCD5 (climate model) from Drying out the Tropics, New Scientist, May 6, 1995.

This figure comprises a pictorial presentation of the results of computer modelling that compares global climate conditions in 1965 with predictions for 2050, and assists the readers in grasping the dramatic nature of predicted changes. Ideationally, colouring in the models aids understanding just how severely certain parts of tropical
countries will be affected. The caption assists the reader’s absorption of information, adding that the projected dire climate conditions, possibly involving a temperature rise of 4°C, is caused by greenhouse gas emissions. In textual terms, the figure summarises the ideas presented in EVALUATION and SPECIFIC CLAIM for the readers. Even though the visual is presented in a stylised form, it conveys interpersonal meaning. Readers, especially those who live in tropical areas, would find the information alarming. Firstly, the readers would be struck by the emotionally disturbing title of the caption (Climate chaos). Secondly, the figure is placed next to portentous wording, which repeatedly mentions frequent severe droughts and frequent droughts, severe droughts appearing twice in the caption. Within half a page, the readers are told many times that the tropics would experience dire consequences from climate change processes.

![Decline in the Ozone Shield](image)

**Figure 5.19 CCOT6 (ozone decline) from As the Ozone Thins, the Plot Thickens, The Amicus Journal, Summer 1991.**

Figure 5.19 is a combination of two forms of non-verbal representation, namely, pictorial and tabular, which are interdependent. The picture of the globe shows the parts of the world located at different latitudes above the equator and the table compares the amount of ozone losses during winter and summer at the different latitudes indicated on the globe. The readers receive the total gestalt by looking at the
visuals alone. The caption helps to increase the reader’s understanding of ozone decline. Overall they provide the readers with knowledge about the winter and summer ozone declines in the Northern hemisphere. Together, they perform an interesting textual function in that they do not summarise the wording nor reiterate a certain point of the argument. The function of this figure can be viewed in two ways: firstly, as an attempt to summarise the section of the article which describes ozone losses, or secondly as additional information which is useful to the readers. It, however, can be regarded as having a ‘double seeing’ effect in that the figure acts as a summary of what was established prior to the article. It works as a text parallel to the article. When readers read the article and look at the visual, they understand the article more clearly because they have more than one source of information from which they can learn.
The Heat Is On

Chemical wastes spewed into the air threaten the earth's climate

This summer, the Cabo de Hornos Hotel in Punta Arenas (pop. 100,000) is ordinarily filled with tourists who spend their days browsing in the local tax-free shops or visiting the jagged granite mountains just out of town. But this year, American scientists and technicians who converged on Chile's southernmost city for most of August and September ignored advertisements for the hotel's facilities to study the ozone layer, a thin shield of gas that protects the earth's surface from lethal ultraviolet radiation from space.

Chemical wastes spewed into the air threaten the earth's climate

The CFC connection was more evident than ever this summer, as scientists and technicians who converged on Chile's southernmost city for most of August and September ignored advertisements for the hotel's facilities to study the ozone layer, a thin shield of gas that protects the earth's surface from lethal ultraviolet radiation from space.

The Heat Is On

Chemical wastes spewed into the air threaten the earth's climate

The CFC connection was more evident than ever this summer, as scientists and technicians who converged on Chile's southernmost city for most of August and September ignored advertisements for the hotel's facilities to study the ozone layer, a thin shield of gas that protects the earth's surface from lethal ultraviolet radiation from space.

Figure 5. 20 CCH1 (ozone depletion) from The Heat Is On, Time, October 19, 1987.
CCH1 (ozone depletion) contains information in a stylised form about ozone depletion and the greenhouse effect (the sun’s rays, clouds, mountains, seas etc.). The stylisation assists the diagram in representing the atmospheric processes involved, and at the same maintains scientific concepts and presents them in an intelligible fashion. The diagram contains high values of the three metafunctions. Experientially, it explains to the readers the process of ozone depletion and greenhouse effect while textually, it summarises all of the main points of the article. Interpersonally, its impact is one which causes anxiety in the reader’s mind by the lexical resources employed in the caption. For example, the label in the diagram (The future danger) conveys a negative view of the future. The label could be presented in a more neutral manner, for example, The present situation could move to The future situation instead of The future danger which pre-judges the topic. Such a title is obviously capable of engaging the readers emotionally. Another caption accompanying the diagram (What could happen) also disturbs the reader’s state of mind. Even though the low-valued modality: 'probability' could be used in the subheadings, the propositions (Much of the Mid-West becomes a dust bowl and Sea level rises, flooding portions of the East Gulf coasts) are made in present tense, giving the feeling of “here and now” and thus make the predicted propositions much more definite. This is reinforced by the specificity of the predictions. Considered together with the title of the article (The Heat Is On), and occupying more than half a page on each of two pages, the diagram is effective in amplifying the reader’s anxiety about the future.
Figure 5.21 CCS1 (ozone hole) from Son of Ozone Hole, Discover, October 1993.

CCS1 (ozone hole), the only visual in the article, is a computerised image of the globe showing the spring ozone hole over the South Pole. The caption (Purple pulsing presence of the polar spring: The ozone hole) echoes the same ideational meaning as shown in the picture. It merely summarises the main point of the argument and does not have high interpersonal impact on the reader.

Figure 5.22 below is an example of visuals that are informative but still entice interpersonal reaction. As with CCH1 (ozone depletion) above, the diagram pictorialises the process of ozone depletion, and the potential harmful effects of ultraviolet light (the ultraviolet rays depicted by violet arrows, oxygen and ozone molecules, houses, factories etc.), which makes it easier for the readers to retain the information in their memory. Experientially, the visual summarises existing knowledge about how the ozone layer is depleted and what effects it could cause. Textually, the diagram sums up the main idea in the written text. Interpersonally, the information affects the readers emotionally because they recognise the potential dangers caused by ozone depletion such as cataracts, skin cancers, and low immune system. These dangers are presented by images of searing violet arrows piercing...
sensitive body parts (an eye and an arm) while the harmful effects are written onto a background of red, the colour of danger

Figure 5. 22 CCOV4 (ozone danger) from *The Ozone Vanishes*, *Time*, February 17, 1992.
Figure 5. 23 CCC1 (ice sheet) from Cold Comfort, Discover, August 1992.

The main argument of the text in which Figure 5.23 appears is to discuss that global warming would result in a fall in sea levels not a rise. This central, page one photograph captures the image of ice sheets but it cannot depict the process of the ice sheet retreating or advancing. It is clear that the effect of a photograph in capturing this concept is very limited, however, its position ensures that it will attract attention before the text does. The motive behind the photograph becomes clear when it is accompanied by the caption (Are ice sheets coming or going? Coastal cities would like to know.) The readers thereby learn little but the interpersonal meaning is hammered home by the notion of a glacier advancing on a city. Textually, it sensationalises the main point of the text, that is, even though some experiments suggest that ice sheets would grow in summer and sea level would fall, there are still uncertainties about the outcome; sea levels may fall, or rise. Thus, the photograph
itself does not allow the readers to become emotionally involved in it, but together with the caption it renders a strong degree of interpersonal involvement as it plants fear or at least apprehension, in the reader's mind, especially those who live in coastal areas, by using a rhetorical question.

Figure 5.24 CCI3 (icecap2) from Icy Prospects for a Warmer World, *New Scientist*, August 8, 1992.

By comparison, Figure 5.24, a two-third page photograph of a polar landscape gives little information about the text ideationally, textually or interpersonally. The photograph itself provides no information to the readers as to what it means. Furthermore, the caption (*Ice archive: Antarctica is yielding clues about the future climate.*) provides no information concerning what kind of clues about future climate the ice cap may yield. The only clue to why the photograph is there lies in the verbal text which reads: *Some coastal and interior sites in Antarctica have accumulated ice*
over the past 80 years, giving a growth rate equivalent to a fall in sea level of 0.75 millimetres per year. However, the implications of the caption are far from clear. In this case it appears that the readers must deduce the meaning of the photograph from the written text. In reality such a visual represents an indiscriminate use of barely related, and uninformative images, which appear to be designed partly to do nothing more than fill space or add an artistic dimension to the page.

Figures 5.25 and 5.26 below are taken from different texts (Figure 5.25 is from ‘Methane’ and Figure 5.26 is from ‘Heat’) but they share some common characteristics. The photographs depicting rubbish piling up in a tip, and a smokestack emitting smoke, are typical images that have been used in the media to represent the notion of global warming. Both images have become clichéd. Both are naturalised, that is, photographs, but neither convey information which extends the argument in the texts and nor do they summarise the main point. The captions (CCM5: Rubbish tips ferment to produce a tappable source of methane, and CCH4: Factory in Saskatchewan: Industrial emissions increase airborne CO₂) refer to very minor points in the text. The impact of utilising the two photographs is high in terms of interpersonal aspects. CCM5 (rubbish tip) reflects only one source of the methane mentioned in SPECIFIC CLAIM, and this is by a quotation from an expert which reads: “very large increases in methane production from waste dumps are expected in the coming decades from the developing world”. Because the photograph appears after reading this part of the text, the emotional involvement of readers is amplified. It is as if the readers are constantly reminded that developing countries are the major methane production sites even though it does not state where the photograph of the rubbish tip was taken. Such use of naturalised iconic visuals demonstrates particularly well the Western cultural and social assumptions which inform even popular science discourse. The social impact of the genre is therefore pregnant with meanings which reinforce cultural stereotypes through the presumed irrefutable logic of science. In a similar vein, CCH4 (factory) is a good example of an icon used in the media which produces an emotional effect. In the ‘Heat’ text, the writer only mentions one factor that
contributes to global warming. In fact, he does not say that smoke factories emit CO$_2$ at all, but this is apparently not deemed relevant and the assumption appears to be a standard that photograph of smoke coming up from a factory’s chimney can depict the issue of global warming.

Figure 5. 25 CCM5 (rubbish tip) from Methane: The Hidden Greenhouse Gas, *New Scientist*, May 6, 1989.

Figure 5. 26 CCH4 (factory) from The Heat Is On, *Time*, October 19, 1987.