CHAPTER 4 - Hallidayan Interpretations of Visual Communication

4.0 Introduction

The previous chapter suggested that developments in general linguistic theory have informed the interpretation of other communication modes besides language. It was noted that there have been groups of researchers, usually characterised as the Prague School and the Paris School, which have utilised linguistic concepts derived originally from Saussure's principles to examine non-linguistic modes. This chapter will now concentrate on another, more recent group of researchers who have attempted to use linguistically-derived insights to examine non-linguistic modes. This school, which could rather loosely be referred to as the 'Hallidayan School', draws on the general theory of language and communication developed by M.A.K. Halliday (1978, 1985) which is generally referred to as Systemic Functional Linguistics (SFL), and was outlined in the previous chapter. This school also interprets language as a socially-based semiotic system, and drawing on the Saussurean conception of the sign and Hjelmslevian ideas regarding the positioning of language within a broader semiotic framework, has attempted analyses of such areas as the 'grammar' of images in educational contexts, and the visual semiotics of displayed art (sculpture, architecture and painting).

The most significant amount of work carried out by those working on a Hallidayan interpretation of meaning-making in visual semiotic modes is concerned with two areas: various types of images such as photographs, drawings and diagrams, and displayed art in painting, sculpture and architecture. With the analysis of images, two sets of publications by Gunther Kress and his co-authors, Robert Hodge and Theo van Leeuwen are of note. The first set, by Kress and Hodge, comprises *Language as Ideology* (1979) and *Social Semiotics* (1988), and the second set, by Kress and van Leeuwen, comprises *Reading Images* (1990) and *Reading Images: The Grammar of Visual Design* (1996). These four could in a sense be read as the serial unfolding of a "social semiotic theory of representation", and Kress and van Leeuwen in fact refer to their ideas as being

part of a “fledgling movement” of “social semiotics” (op.cit:5), which they posit as being one of three schools of semiotics, the other two being the already discussed Prague and Paris Schools (loc.cit.). In the first set of books, *Social Semiotics* is the source of much of the theoretical foundation of the two subsequent *Reading Images* publications, of which *Reading Images: The Grammar of Visual Design* (1996) is largely a reiteration and extension of its predecessor, *Reading Images* (1990). Accordingly, this review will focus on the latter of the two books and draw attention to differences where appropriate.

The language of displayed art is examined by O’Toole in two recent publications (1994, 1995), wherein he reinterprets Halliday's metafunctions of language to examine the ways that the visual modes of sculpture, architecture, and classical art project their meanings. He applies the Hallidayan linguistic principle of *Rank Scale* in constituent structure analysis (Halliday 1994:23, 35) to the interpretation of displayed art, where it is viewed and interpreted in terms of a hierarchy of meaningful units, and also attempts to relate these meanings to the contexts in which they are situated. O'Toole's work will be discussed in the final section of this chapter.

Since this study takes a Hallidayan view of communication in an attempt to account for the ways that intersemiotic complementarity is realised in page-based multimodal text, and seeks to test the assumption that different semiotic systems can and do work together semantically (Halliday and Hasan 1985:4), the work by Kress and van Leeuwen on visual grammar and O’Toole on language of displayed art would seem to be germane. Accordingly, this chapter will review and briefly explicate those aspects of their models/analyses which are potentially the most applicable to the interpretation of the kinds of visuals commonly used in *The Economist* magazine. These key points will be used for the analysis of the sample text drawn from the Finance Department of *The Economist*, and where appropriate to assist the reader’s understanding of how visuals are interpreted in these approaches, some illustrative visual examples drawn from *The Economist* will be analysed.

This chapter will consist of four main sections, the first dealing with Kress' early collaboration with Hodge in developing their 'social semiotics', the second with Kress and van Leeuwen's grammar of images, and the third with O'Toole's analysis of the language of displayed art. The fourth and final section will bring together those aspects of the models/analyses which are deemed most applicable to the interpretation of *The Economist* magazine visuals.

4.1 Social Semiotics

The first book by Kress and Hodge, *Language as Ideology* (1979), is a discussion of the possible ways that language can be linked in ideological terms not only to its social uses as a tool for communication, but also to its role as a means of political control. Ideology in language here is viewed in two ways: in scientific and metaphysical terms, and in terms of various kinds of political ideologies (op.cit:6). This work only focuses exclusively on the linguistic mode however, in an attempt to illuminate verbal language as a social phenomenon, and to provide analytical tools for various disciplines to use in their explorations of how social and political forces and processes act on and through discourse.

Hodge and Kress suggest that their perceptions of the limitations inherent in their approach in *Language as Ideology* provided the impetus for the subsequent and second work of the set, *Social Semiotics* (Hodge and Kress 1988). The aim of this work is to produce a 'usable linguistics', or a 'critical linguistics' (op.cit:vii). The new approach is based on two premises: the first is "the primacy of the social dimension in understanding language structures and processes", and the second is that "no single code can be successfully studied or fully understood in isolation" (op.cit:viii). This recognises that meaning is not restricted only to the linguistic code, but "resides so strongly and pervasively in other systems of meaning, in a multiplicity of visual, aural, behavioural and other codes, that a concentration on words alone is not enough." (op.cit:vii). Thus, *Social Semiotics* is an attempt consider the ways that meanings are projected via a range of modes, such as through language, images, comics and television. Kress and Hodge set up and outline their views of a theory of communication and society, views which they acknowledge in this and the previous publication as being derived directly from or

greatly influenced by M.A.K. Halliday's work, especially his *Language as Social Semiotic* (1978). These views are summarised by Hodge and Kress in the following:

> We see communication essentially as a process, not as a disembodied set of meanings or texts. Meaning is produced and reproduced under specific social conditions, through specific material forms and agencies. It exists in relation to concrete subjects and objects, and is inexplicable except in terms of this set of relationships. Society is typically constituted by structures and relations of power, exercised or resisted; it is characterised by conflict as well as cohesion, so that the structures of meaning at all levels, from dominant ideological forms to local acts of meaning will show traces of contradiction, ambiguity, polysemy in various proportions, by various means. So for us, texts and contexts, agents and objects of meaning, social structures and forces and their complex interrelationships together constitute the minimal and irreducible object of semiotic analysis (1988:viii).

Hodge and Kress analyse some linguistic and non-linguistic modes in an attempt to develop and explain the application of these principles, analyses which form the foundation of the approach taken by Kress and van Leeuwen in their set of publications. These analyses are interesting for the insights they provide in terms of the ways that ideology is projected through different visual and verbal modes. However, there is little to inform the focus of this study, which is to examine the ways that these visual and verbal modes complement each other to project meaning multimodally. This is because their analyses, like those of many other researchers working in this area, are mode-specific — they examine how each mode projects its meanings separately, and do not attempt to clarify what happens intersemiotically when two modes co-occur.

4.2 Reading Images

The interest shown in the visual mode by Kress in *Social Semiotics* is extended in the next set of two books co-written with Theo van Leeuwen, *Reading Images* (1990) and *Reading Images: The Grammar of Visual Design* (1996), both of which make the same assumptions as *Social Semiotics* about the nature of communication, and which utilise similar approaches in interpreting visual and verbal meanings in multimodal texts. The aim of both these publications is to develop a 'grammar' of images, the first exploring this aim in an analysis and

discussion of images in children's educational literature, and the second continuing and extending this exploration to more generalised images drawn from public media sources such as advertisements, magazine articles, maps, art images and various kinds of diagrams. In both works the influence of the Hallidayan linguistic model is much more pronounced and systematically applied than in *Social Semiotics*, and there is a continuation of the application of principles derived from critical analysis, though in a seemingly less overt way (Kress' previous co-author Hodge is referenced in the first *Reading Images* and acknowledged as an important influence in the Preface of the second). Since *Reading Images: The Grammar of Visual Design* (1996) is largely a reiteration and extension of its predecessor, this review will focus on the propositions it presents exclusively and draw attention to differences between the two where necessary, with the understanding that reference to *Reading Images: The Grammar of Visual Design* also implies that the same points are presented in *Reading Images*. For ease of identification and where it is necessary to differentiate the two titles, the first book will be referred to as *Reading Images* (1990) and the second as *The Grammar of Visual Design* (1996).

Kress and van Leeuwen start out in *The Grammar of Visual Design* by stating that their aim in producing a 'grammar of visual design' is to present a socially-based theory of visual representation (1996:1,5). In doing so they draw an analogy with language, noting that others working in visual semiotics before them have tended to concentrate on what could be described as the 'lexis' rather than the 'grammar' of images, in that they have concentrated on the meaning projected by the individuals, scenes and objects portrayed within images rather than the connected meanings (op.cit:1). The use of the term 'grammar' therefore implies that they will attempt to examine the ways in which what is depicted in images is combined into a coherent, meaningful whole, in much the same way that discourse analysts examine how words are combined into clauses, sentences and whole texts. This is a kind of visual discourse approach which aims, in common with many functional linguistic models, to link form with meaning, and where linguistic and visual "grammatical forms [are seen] as resources for encoding interpretations of experience and forms of social (inter)action" (op.cit:1). Thus, culture and ideology

are also important in both the verbal and visual grammars, a point which Kress and van Leeuwen highlight in quoting Halliday's assertion that "grammar goes beyond formal rules of correctness. It is a means of representing patterns of experience … It enables human beings to present a mental picture of reality, to make sense of their experience of what goes on around them and inside them" (1985:101).

In both books, Kress and van Leeuwen attempt to describe the structures that visuals use to realise a variety of different kinds of meanings, and they link their analyses with discussions of visual literacy and the implications for education. They do this because of their perception of the overwhelming importance of visual communication in the modern world, the dominance of the verbal over the visual in educational systems, and their view that there is a " staggering inability on all our parts to talk and think in any serious way about what is actually communicated by means of images and visual design" (1990:3, 1996:16). This last view is one that could be readily taken issue with, especially considering that Kress and van Leeuwen do draw very heavily on selected publications from a considerable body of work by researchers in such areas as communication and media studies (Dondis 1973; Dyer 1982; Fiske 1982; et.al.), studies on the psychology of visual perception (Arnheim 1969, 1974, 1982; Gombrich 1960 et.al.), information design (Tufte 1983 et.al.) and visual semiotics (Barthes 1967, 1977; Eco 1976; Saint-Martin 1987 et.al.), in their interpretations of the ways that images do project their meanings. What is new and interesting in Kress and van Leeuwen's approach to the interpretation of visual meaning however, is the application and adaptation of linguistic insights from the socially-based SFL model in an attempt to link the visual meanings in an image to the producers of that image and their particular social contexts.

In their rationale, Kress and van Leeuwen place themselves at variance with Barthes' (1977) view of the meaning of the image, and do not totally accept his notion of dependency between image and verbal text, where he suggests that the meaning of images (as well as other codes such as food, dress etc.) are related to and mostly dependent on language for 'fixing' their meanings. They argue that

while Barthes' essay on image-text relations explains elements of the communicative relationship between the two codes, it fails to recognise that "the visual component of a text is an independently organised and structured message — connected with verbal text, but in no way dependent on it. And similarly the other way round." (Kress and van Leeuwen 1996:17). Their aim therefore, is to utilise underlying principles in the 'grammar' of the verbal to explicate the 'grammar' of the visual, taking the point of view that "language and visual communication both realise the same more fundamental and far-reaching systems of meaning that constitute our culture, each by its own specific forms, and independently" (loc.cit.). The implication here is that both verbal and visual codes are seen to express the same kinds of meanings, but by different methods which draw on different semiotic systems. In any particular cultural context (Western European, for example), there may be a considerable degree of congruence between the two codes. There may also be areas of difference, areas where the verbal can express itself and the visual cannot, and vice versa. The two semiotic systems and their potential meanings are therefore neither fully conflated, nor are they wholly opposed in their respective codes (op.cit:17-18). Further, both these modes are realisations of social semiotic systems, wherein the meanings which all communicators (whatever the code) choose to express are seen to be social in nature, and arise out of the culture in which they are situated.

As already mentioned, Kress and van Leeuwen utilise Halliday's (1978, 1985) SFL theory to provide an analogy for the development of a visual grammar and to outline the kinds of categories which they regard as essential to the analysis of the visual semiotic. They suggest that

> The visual, like all semiotic modes, has to serve several communicational (and representational) requirements, in order to function as a full system of communication. We have adopted the theoretical notion of 'metafunction' from the work of Michael Halliday for the purpose of dealing with this factor. The three metafunctions which he posits are the *ideational*, the *interpersonal*, and the *textual* (1996:40).

Kress and van Leeuwen then posit that reading (or viewing) a visual involves two kinds of participants: the *interactive participants*, and the *represented participants*

(op.cit:45-46). The former are the participants who are interacting with each other in the act of reading a visual, one being the graphic designer/photographer/artist, and the other the viewer. This category represents the social relations between the viewer and the visual. The latter is all the elements or entities that are actually present in the visual, whether animate or inanimate, elements which represent the situation shown, the current world-view, or states of being in the world. Kress and van Leeuwen also assert that reading (or viewing) a visual involves reading a *structurally coherent arrangement of elements* which combines and integrates these two kinds of participants, thus representing the structuring of the current world-view (op.cit:40-41). By applying Halliday's concept of metafunctions to other modes beside the linguistic, Kress and van Leeuwen are clearly assuming that the visual mode draws upon the same semantic system as does language and that "everything [which can be] said about the semiotic code of language can be said, in terms specific to it, about the semiotic code of pictures" (1990:19). Also, while visuals do differ in terms of the choices from the cultural semantic system that they can realise and in the ways in which these choices are realised, still “the semiotic code of language and the semiotic code of pictures each have their own quite particular means of realising what in the end are perhaps quite similar semantic relations” (1996:44).

The three elements, the interactive and represented participants, and the coherent structural elements of a visual, are correlated with Halliday's three metafunctions and may be summarised briefly as:

- IDEATIONAL: a range of ways of semantically relating represented participants.
- INTERPERSONAL: a range of ways of semantically relating interactive participants.
- TEXTUAL: a range of ways of semantically relating the elements on a page to each other.

The categories of the visual grammar proposed by Kress and van Leeuwen are summarised in Tables 4.1, 4.2 and 4.4 following. What is of immediate notice is that the metafunctional terminology posited by Halliday to describe meanings at the semantic level in his SFL model have been changed from ideational to *Representational* meanings, from interpersonal to *Interactive* meanings, and from

textual to *Composition(al)* meanings. Why this was done is not made clear, but Kress and van Leeuwen do adopt much of the lexicogrammatical terminology utilised by Halliday as the following discussion will show. This includes the terminology used in the grammatical system of TRANSITIVITY, which "construes the world of experience into a set of manageable process types" (Halliday 1994:106), the grammatical system of MOOD where the clause "is also organised as an interactive event involving a speaker, or writer, and audience" (op.cit:68), and THEMATIC STRUCTURE, which "gives the clause its character as a message" (op.cit:36). Kress and van Leeuwen also attempt to take account of the paradigmatic features of Halliday's systemic grammar by representing the various aspects of their visual grammar in terms of system networks, or networks of potential choices from which the people who create a visual can make selections. This is an attempt to capture the SFL interpretation of language as meaning potential, where interlocutors make choices from various meaning systems in the act of communicating in various contexts.

It should be pointed out at this juncture that the analysis and interpretation of visual forms of communication involves examining them from different points of view, and that in focussing on one point of view in particular, for example Representational meaning and its sub-systems, it is easy to lose sight of the fact that a visual is the result of "the convergence of many different signifying systems" (Kress and van Leeuwen 1996:265). Thus it is necessary to keep in mind that the visual systems of Representational (ideational), Interactive (interpersonal) and Compositional (textual) meanings occur and project their meanings simultaneously, and that they are multidimensional structures. Like sentences, which can be simple (only one clause or process), or complex (several clauses, each with their own process, and hypotactically and paratactically related to each other), visuals can also be simple or complex (op.cit:112).

The next part of this chapter will overview and assess Kress and van Leeuwen's visual grammar in terms of those aspects which may be applicable to the analysis of *The Economist* magazine visuals, and which could be utilised in the framework

developed for the analysis of intersemiotic complementarity. A small sample of visuals from *The Economist* are reproduced and presented where appropriate.

4.2.1 Representational Structures

This section will discuss and evaluate Kress and van Leeuwen's description of the ways that various kinds of visuals organise and represent their meanings representationally (ideational). The two sections following this one will then discuss and review the ways that visuals attempt to address their potential viewers in interpersonal terms, and the ways that visuals organise their meanings on the page, in compositional or layout terms.

In their discussion of *representational structures* in the visual transitivity system, or the visual resources for representing interactions and conceptual relations between people, places and things in visuals, Kress and van Leeuwen recognise two major processes: *Conceptual* and *Narrative* processes (1996:56). Both these processes represent patterns of experience and phenomena in terms of sequences of process configurations, and configurations of processes, participants, and circumstances, objects, qualities, and quantities. Conceptual processes are seen to "represent participants in terms of their generalised and more or less stable and timeless essence" (op.cit:56), and "in terms of class, or structure, or meaning" (op.cit:79), while Narrative processes or patterns (which were formerly referred to as Presentational processes in *Reading Images* 1990) "serve to present unfolding actions and events, processes of change, transitory spatial arrangements" (op.cit:56). Narrative processes therefore deal with depicted actions and events, rather than depicted states of being which have the essence of constancy, and their spatial arrangements are in a sense transitory, rather than being concerned with a fixed and constant spatial order, as in the conceptual processes. Kress and van Leeuwen approximate the conceptual processes with the *existential* and *relational* processes of Halliday's TRANSITIVITY system, and the narrative processes with

Representational Structures (ideational)	Narrative Representations	Processes	· Action (Actor + Goal) · Reactional (Reactor + Phenomena) · Speech & Mental · Conversion · Geometrical symbolism
		Circumstances	· Setting · Means · Accompaniment
	Conceptual Representations	Classificational Processes	· Covert · Overt (Single or multi-leveled)
		Analytical Processes	· Unstructured · Structured 1. Temporal 2. Exhaustive and inclusive 3. Conjoined & compounded exhaustive structures 4. Topographical and topological processes 5. Dimensional and quantitative topography 6. Spatio-temporal
		Symbolic Processes	· Attributive · Suggestive

Table 4.1 Representational visual structures (Ideational) adapted from *The Grammar of Visual Design* (1996).

the *material, behavioural* and in a limited way *mental* and *verbal* processes, again making the point that they recognise that "while visual structures and verbal structures can be used to express meanings from a common cultural source, …… the two media are not simply alternative means for representing 'the same thing'" (op.cit:75-76). These visual representational processes are summarised in Table 4.1.

4.2.1.1 Narrative Processes

Within Narrative processes in visuals Kress and van Leeuwen recognise two major kinds: *Actional* and *Reactional* processes. Actional processes are those in which some kind of physical action relates the represented participants. They can be *non-transactional*, where there is only one participant and therefore no action directed towards anyone or anything, or *transactional*, where there are two or more participants and something is in a sense exchanged. In this situation there is an *actor*, as well as a *goal* and a *beneficiary*. Both transactional and non-transactional action relations approximate the transitive and intransitive verb distinction in language, and are realised by a vector, a line that can be visually projected from the actor (the most prominent of the participants), and extended towards the other participant(s) or some goal (1990:82, 1996:61-64). The actor's prominence can be realised by relative size, place in the composition, contrast against a background, colour saturation or prominence, sharpness of focus, and the 'psychological salience' which the human face has for viewers (1996:64). There may also be more than one actional process going on in one image which are secondary transactional processes (termed 'minor' processes). These are an instance of what Kress and van Leeuwen refer to as *Embedding* in images. This difference between 'major' and 'minor' processes and therefore the difference between 'major' and 'minor' participants can be realised via a range of visual techniques, such as relative size and relative conspicuousness of the elements portrayed (op.cit:113).

Reactional processes are processes in which the represented participants are characterised by a reaction, which is realised by the direction of the glance of one of the participants, the *reacter*. Since a reaction to something is necessarily a trait

of living beings, the reacter should be human, or a human-like animal (with visible eyes and the ability to produce facial expressions). The direction or focus of this reaction (a look or gaze) follows a vector to the receiving participant or whole process, termed the *phenomenon*, and the particular nature of this reaction is encoded in the way that the reacter is looking at the phenomenon (1990:83-84, 1996:64-67).

In *The Grammar of Visual Design* (1996) Kress and van Leeuwen add three more visual narrative processes which were not given in *Reading Images* (1990). These three processes, which are rare or do not occur at all in the kind of visuals used in *The Economist* magazine, are *speech* and *mental* processes, *conversion* processes, and *geometrical symbolism*. The speech and mental processes approximate Halliday's 'projection' (1994:219), and refer to the vectors which can be drawn from speakers or thinkers to their thoughts, or dialogue speaking balloons in comic strips, and more recently speaking images on computer display screens. These are transactional, and connect a living being with attendant speech or thoughts (Kress and van Leeuwen 1996:67). Conversion processes refer to the kinds of processes found in diagrams portraying chained processes and cycles of action (as in a Water Cycle diagram), where there is "a participant which is a goal with respect to one participant and the Actor with respect to another" (op.cit:68). Geometrical symbolism refers to the kinds of diagrams where there are no participants, but the symbolic nature of the diagram suggests an action which can be identified by a vector, as in a diagram representing the spiral action of a 'twister', or a simple arrow, which simply indicates a direction.

Kress and van Leeuwen (op.cit:71-73) also recognise that there are secondary participants in many images, identified as *Circumstances*, which are defined as "participants which could be left out without affecting the basic proposition realised by the narrative pattern, even though their deletion would of course entail a loss of information" (op.cit:71). Following Halliday (1994:149ff), Kress and van Leeuwen recognise three forms. These are *Locative* Circumstances, Circumstances of *Accompaniment*, and Circumstances of *Means*. These circumstantial participants

Visual 1: Unemployment - Little shop of horrors plant (*The Economist,* April 25th 1992, p57).

are not related to each other by vectors, but via aspects of location (thus the *Setting* becomes a participant), or by simply co-occurring together in the same visual with no obvious relationship other than being with one another in the frame (a relation of *Accompaniment*), or finally by being used by a participant in some action (a relation of *Means*) where there may be an absence of a clear vector between the user and the tool, but which may often assist in the formation of vectors between the most salient Actor and the Goal (1996:71-73).

As already mentioned, visuals are multidimensional in that they simultaneously utilise a range of different visual processes in order to project their meanings to their viewers. A good illustration of this kind of complexity can be seen in Visual 1, which contains a number of embedded major and minor processes. Using Kress and van Leeuwen's terminology, this visual reveals:

1. A major narrative transactional process, that of the threat posed by an overhanging "Little Shop of Horrors" plant (as actor) towards the young shoots (as goal). This is realised firstly by the vector formed from the plant's mouth towards the plants — notice that the gardeners are not under threat from this mouth, as there is no vector which can be drawn from it towards them — and the relative size of the overhanging plant, which makes it visually more salient than the other represented participants.

2. A major narrative transactional process, which is perhaps competing in terms of its 'visual force' with the threatening process of the plant, is that of the gardening/tending action of the three other represented participants (actors) towards the young shoots (goal). This transactional relation is realised by vectors which can be drawn from the eyes of the three figures directed towards the young shoots.

3. A minor narrative transactional process enacted by the kneeling man (actor) who is touching (tending to) the young shoots (goal).

4. Participants acting as circumstances of means: the implements which the three 'gardeners' are holding work to support the gardening/tending process interpretation as they also form vectors towards the goal, the young shoots, and they represent circumstances of means to that process.

From this multiple analysis it can be seen that in terms of Representational meanings only (and not Interactional and Compositional), a visual can be a very complex multidimensional configuration.

4.2.1.2 Conceptual Processes

Within *Conceptual* processes in visuals Kress and van Leeuwen recognise three major kinds: *Classificational*, *Analytical*, and *Symbolic* Processes (the first two Conceptual processes were originally described as *Descriptive* Classificational, and *Descriptive* Analytical in *Reading Images*, and an extra set of processes, *Genealogical* Processes, has been omitted in *The Grammar of Visual Design*). In Conceptual processes the participants are represented in generalised stable, and timeless terms, and in terms of class, or structure, or meaning (1996:79). They therefore have the sense of projecting states of being which have the essence of constancy, rather than being concerned with a fixed and constant spatial order.

Classificational processes are those which relate the participants in a 'kind of' relation, in terms of a taxonomy of types of things, or classes of things (op.cit:79-88). Each of the participants is presented as a typical (*Subordinate*) member of a particular overarching (*Superordinate*) category or class of things, and this can be either a *Covert Taxonomy* or an *Overt Taxonomy*. The Covert taxonomy is realised by a symmetrical spatial arrangement of the participants, such that any similarity between them as members of a particular Superordinate class is enhanced by the symmetrical arrangement in their placement on the page. This is uncommon in *The Economist* magazine, but often seen in photographic advertising, where the aim is not to show every single detail clearly, but to emphasise the relevant, salient details to attract the viewer (potential buyer) to them. In educational diagrams (in for example a Geography text) there may be an emphasis on the depiction of generic items, items with common characteristics, rather than the features of specific items from the same class. Overt taxonomies however, include the Superordinate participant in the frame. This process is most commonly represented as a tree diagram, a series of photographs joined in the same tree organisation and linked together by drawn lines, or some kind of a pyramid structure. All these structures can be single levelled or multi-levelled in terms of the layers of subordinate classes. In *The Economist* magazine these kinds of visual structures are not common, typical instances being more likely to occur in pedagogical texts.

Analytical processes, on the other hand, relate the participants in an image in terms of part/whole relations, where one participant represents the 'whole', referred to as the *Carrier*, and the other participants (of any number) are the 'parts', termed the *Possessive Attributes*. This relation may be *Structured*, where the Carrier and the Possessive Attributes are shown, or they may be *Unstructured*, where only the Possessive Attributes are depicted, and the viewer is left to deduce the nature of the Carrier. This latter type does not occur in *The Economist* magazine, but a typical instance would be a dress-making pattern diagram which shows the parts of a dress but not the finished item (op.cit:94). Within the Structured analytical processes however, Kress and van Leeuwen identify six other categories of processes which can be spatially or temporally organised, the final two of which are certainly relevant to *The Economist*. These six categories are:

(1) the *Temporal*,

(2) the *Exhaustive* and *Inclusive,*

(3) the *Conjoined* and *Compounded Exhaustive*,

(4) the *Topographical* and *Topological*,

(5) the *Dimensional* and *Quantitative Topography*, and

(6) the *Spatio-temporal* (op.cit:95-108).

The two relevant processes referred to as *Dimensional* and *Quantitative Topography* typically involve pie charts and bar charts that are drawn to scale, but the scale is not based on the actual physical dimensions of the participants but "on the quantity or frequency of aggregates of participants that are taken to be identical" (op.cit:103). Pie charts and bar graphs both involve visual representations of relative size, where for example each numerically or proportionally-based sector in a pie chart is shown in relation to the other numerically or proportionally-based sectors. In Kress and van Leeuwen's sense both pie and bar charts are also *dimensional*, in this case one-dimensional, in that they show only one carrier with its Possessive Attributes, which are quantitative in nature (op.cit:104). A very common instance of this from *The Economist* magazine is Visual 2, where the pie chart and bar graphs both divide their Carriers into quantities or aggregates; the pie chart's carrier (redemption periods for securities) is divided up into the Possessive Attributes based on time to maturity,

while the bar graphs' carrier (also redemption periods for securities) is divided up by country into another series of aggregates for comparison purposes. In both these cases quantitative figures are translated in visual representations of relative size — for example in the pie chart each sector shows proportionally the different times to maturity *in relation to* the other times; this means that it is not showing that the 2-10 years redemption figure is actually located next to the 1-2 years figure, but how the *number* or *percentage* of the 2-10 years time period stands in relation to the *number* or *percentage* of 1-2 years time period.

In *Spatio-temporal* processes there is a conjunction between a set of spatially oriented participants (as in a line graph representing volume, amount, frequency, and proportion in the same way as a bar chart can) and a time line, giving an impression more of rates of change than relative proportion over time. In Kress and van Leeuwen's sense this is two-dimensional (1996:105-106). A very common visual of this type in *The Economist* magazine, and therefore highly relevant to this study, is the simple two-dimensional line graph on the left-hand side of Visual 2 (following page), which shows the behaviour of some data (maturity periods in months) changing in relation to the passage of time (in years). This graph has a specific year (1945) as a point of origin, and the discrete chronological stages are actually individual points of intersection between years and average maturity periods. These are bound so tightly together into a single line however that the pre-eminent impression is one of a dynamic process of change, growth and fluctuation. One would not initially read the graph by thinking: "in 1946 the average maturity was 125 months, but in 1975 it was about 30 months" and so on. The initial reading would be one which absorbs holistically the impression of fluctuations and change, and not in a piecemeal, fragmented fashion (which is not to say it couldn't be read in that way and may in fact occur in a more detailed analysis).

The final set of processes in Conceptual Representations are *Symbolic* processes. These are about what a participant *means* or *is* (op.cit:108)**.** In other words, these processes are connected to the symbolism or messages conveyed by the

participant relations portrayed. There can be either two participants in the relation or only one.

Visual 2: America's government debt (*The Economist*, June 5th 1993, p71)

Where there are two participants, the participant whose meaning is established in the relation is the *Carrier*, and the participant which represents the meaning or identity itself is the *Symbolic Attribute*. This is the *Symbolic Attributive* process, where objects in images (such as in artworks) are made significant or prominent by such things as being foregrounded, having exaggerated size, being well-lit, or containing strong colours. They are also pointed out by some kind of gesture or posture which can only be interpreted by the viewer as the action of pointing out the attribute to the viewer. They can also look slightly incongruent (or out of place) in terms of the whole of the visual, and they may have some kind of conventional symbolic value, as in a wire fence as a conventional symbol of imprisonment, or barrier to entry (loc.cit.).

This *Symbolic Attributive* process and the kind of visual representation used to project it is very common in *The Economist* magazine, where well-known, public figures are often portrayed in such a way that some symbolic attributes are strongly attached to them. In *The Economist* sketches are commonly used, a medium which can be more easily manipulated to portray various meanings (photographs are rarely if ever used to do this, since they are not so easily manipulated as sketches). A typical example is Visual 3 (following page), which is a sketch portraying a caricatured human Carrier (Lloyd Bentsen) holding upright (and therefore displaying) two implements which are the Symbolic Attributes that confer on him the meaning of cleaner or protector/exterminator. The interpretation of him as cleaner is supported by the symbolic meaning attached to the cleaning brush (to be used on domestic banks), which is reinforced by the proximity of a verbally-labelled cleaning bucket and the fact that he is wearing an apron, a universal symbol of house-cleaning and domestic functions. The Symbolic Attribute of protector/defender is realised by the spiked club, which is a universal symbol of defence and of the classical warrior who must defend his 'castle' from the enemies without (identified verbally as the foreign banks). Further, this visual is posed for the viewer; there is no action to speak of except the fact that he is displaying these two implements for the viewer to notice and to 'get the symbolic meaning', a meaning which is also perhaps reinforced by the

differences in colour between the

Visual 3: America's banking battles (*The Economist*, October 30th 1993, p79)

two clubs — one is white (for the good guys?) and one is black (for the bad guys?). It could be argued also that this 'display' is reinforced by the gaze of the main represented participant directed towards one of the symbolic attributes, which is in a way saying 'look at this' to the viewer, and as a corollary is pointing out its symbolic meaning.

Where there is only one participant, also termed the *Carrier*, its symbolic meaning can be established in another way which *suggests* an interpretation. This is the *Symbolic Suggestive* process**,** which is characterised by a de-emphasising of image detail in favour of 'mood' or 'atmosphere'. In this the focus is off the main participant as being the only primary participant, and there is a sense of an indirect, suggestive attempt to give to the carrier some attribute. This is very common in advertising images and calendars which attempt to give the viewers some sense of the 'atmosphere' of the scene, but it is relatively uncommon in *The Economist* magazine.

To sum up then, in their discussion of *representational structures* in the visual transitivity system, or the visual resources for representing interactions and conceptual relations between people, places and things in visuals, Kress and van Leeuwen have recognised two major visual processes they refer to as *Conceptual* and *Narrative* processes (1996:56). Both these processes are used to represent patterns of experience and phenomena in terms of sequences of process configurations, and configurations of processes, participants, and circumstances, objects, qualities, and quantities in the visual mode. They appear, therefore, to adapt the conceptual meaning of the clause constituents in the SFL Transitivity system and to utilise them for the visual Transitivity system. These functional constituents of the clause are referred to as Participant, Process and Circumstance, as well as Goal (Material Processes) and Attribute (Relational Processes), and would seem to be terminologically useful for the description of multimodal meanings. However, it would seem that the specific terms used by Kress and van Leeuwen to identify these major visual processes may not be of immediate terminological use in this study, because they have no real general terminological counterparts in the SFL model and they relate specifically to the visual mode (this

is discussed more fully in Chapter Five). Their underlying conceptual basis is however applicable and relevant in terms of the kinds of visuals commonly used in *The Economist* magazine, because they approximate the most common forms used in the magazine, visuals which often represent these kinds of processes, i.e. sketches and graphs/charts. Their underlying conceptual elements also are relevant to what Kress and van Leeuwen refer to as visual 'coding orientations', a term which will be explained more fully in the next section on Interactive meanings and applied to visuals which display naturalistic and quantitative meanings.

4.2.2 Interactive Meanings

Up to this point this review has discussed Kress and van Leeuwen's description of the ways that various kinds of visuals organise and represent their meanings representationally (ideational). This section deals with a discussion of the ways that visuals attempt to address their potential viewers in interactional (interpersonal) terms in their visual grammar. In their discussion of *interactive meanings* in their visual grammar, Kress and van Leeuwen recognise that visual forms of communication also utilise resources which both constitute and maintain interaction between the producer(s) and viewer(s) of a visual. As pointed out earlier, Kress and van Leeuwen posit that reading (or viewing) a visual involves two kinds of participants, the *interactive participants*, and the *represented participants* (1996:45-46). The former are the participants who communicate with each other via visual means (the photographer and the viewer(s) for example), and the latter are what is actually depicted in a visual (the people, places and things shown). As it is between speaker/writers and listener/readers, the interpersonal metafunction in relation to visual communication is also concerned with the representation of social relations, in this case between the visual and the viewer. This is important because the placement of the viewer and the visual socially will have a significant influence on how the visual is read and used, or in other words, their relative social placement affects what may be represented, the ways that it is represented, as well as how it may be read and put to use.

Interactive Meanings (interpersonal)	Contact	Image Act	· Offer (Information) · Demand (goods/services)
		Gaze	· Direct (degrees of Engagement) · Indirect (degrees of Disengagement)
	Social Distance	Size of Frame	· Close (Intimate/Personal) · Medium (Social) · Long (Impersonal)
	Attitude	Subjective Image	· Horizontal angle (degrees of Involvement & Detachment) · Vertical angle (degrees of Power to the viewer, to the represented participants, or a relation of equality)
		Objective Image	· Action Orientation (frontal angle) · Knowledge Orientation (top-down angle)
	Modality	Colour	· Colour saturation · Colour differentiation · Colour modulation
		Contextualisation	· Absence of background · Full detail
		Representation	· Maximum abstraction · Maximum representation
		Depth	· Absence of depth · Maximally deep perspective
		Illumination	· Full representation of light and shade · Absence of light and shade
		Brightness	· Maximum brightness · Black and white or shades of light grey and dark grey
		Coding Orientation	· Technological · Sensory · Abstract · Naturalistic

Table 4.2 Interactive meanings (Interpersonal) adapted from *The Grammar of Visual Design* (1996).

Thus, viewing a visual involves "being located in a particular **social** way by and in relation to the image" (Kress and van Leeuwen 1990:23). This happens despite the fact that the producer of the visual is more often than not absent physically from the communicative situation. Even though there is this disjunction between the context of production and the context of reception, the “two do have elements in common: the image itself, and a knowledge of the communicative resources which allow its articulation and understanding, a knowledge of the way social interactions and social relations can be encoded in images” (Kress and van Leeuwen 1996:120). The visual resources for creating or maintaining this social engagement between the viewers and the image are summarised in Table 4.2 and will be overviewed in the following sections. Kress and van Leeuwen emphasise again that these visual dimensions should be considered as “simultaneous systems” in that “any image must either be a ‘demand’ or an ‘offer’ *and* select a certain size of frame *and* select a certain attitude” (op.cit:153). As was done in the preceding section, only those aspects of Kress and van Leeuwen’s framework which are relevant to the analysis of the kinds of visuals commonly used in *The Economist* magazine and which could be utilised in the framework developed for the analysis of intersemiotic complementarity will be overviewed and assessed. A small sample of visuals from *The Economist* are reproduced and presented where appropriate.

4.2.2.1 Contact

The visual resources used to establish and maintain *contact* between the image and the viewer are concerned with the ways that images directly or indirectly address their viewers, and what they simultaneously require them to do (op.cit:119-121). The aspect of importance here is the relation between the sets of participants involved in the viewing of the visuals, the *interactive* participants. In conventional spoken communication, the interactive participants are usually seen as the speaker-listeners (who can in turn reverse roles). There are also the participants who are *represented* participants by virtue of being spoken or written about. They may not physically be there (a typical situation), or they could be the speakers and listeners themselves. With visuals however, there is no physical speaker or drawer actually there; the viewer is alone with the visual, and there is

no opportunity for turn-taking as there is in normal speech-based communication. The situation with the interactive participants in viewing visuals is not dissimilar to that of the writer-reader interactive relationship, where communication is carried out orthographically. The interactive relationship which is common in visuals is one where there is an interactive participant (viewer or viewers) and one or more represented participants which have been drawn or produced for the viewer(s).

Taking Halliday's notion of speech functions and the speech acts they can realise, Kress and van Leeuwen draw a distinction between two kinds of *image acts*. These are *demands* and *offers*. In speech, one can *offer information* (make a statement), which can then be agreed with or contradicted, or one can *offer goods* and *services* (make an offer), which can then be accepted or rejected. Also, in speech one can *demand information* (ask a question), which can then be answered or disclaimed, or one can *demand goods* and *services* (give a command), which can then be obeyed or refused (op.cit:127-129). When images offer however, they most commonly offer information, and when they demand, they most often demand the particular goods and services which would realise a particular social relation, or some kind of response from the viewer. Thus, as Kress and van Leeuwen assert, in Western cultures, visuals generally perform only these two image acts, and not the full range that is possible with the four primary speech functions.

The realisation of a visual *demand* is determined by the presence or absence of a *gaze*, which indicates a form of direct or indirect address to the viewer (op.cit:121-130). The producer is thus using the image to act on or do something to the viewer. The *gaze* always takes the form of a vector formed by the glance of one or more of the animate represented participants outwards to the viewer of the visual. This may often be supported by some kind of physical gesture. The animate represented participant(s), which could be human or animal (mostly human), will demand something via one or more pairs of eyes looking directly at the viewer, and what is demanded by the represented participant(s) in the image depends entirely on *how* the look is conveyed. There may be a smile (suggesting social

affinity), a stare (suggesting disdain), or a pout (suggesting a sexual offer). Each of these actions requires some kind of response from the viewer in terms of entering into some kind of social relation, which in this case is to accede to or deny the demand (op.cit:122-123). In *The Economist* magazine instances of visual demands are quite rare, except perhaps in some of the advertising in each issue. Within *The Economist's* journalistic articles however, visual demands occur only rarely in the form of posed portrait photographs which look directly at the viewers and basically require an acceptance of the message they are projecting about themselves.

In visual *offers*, on the other hand, there is not the requirement of the viewer to enter into some kind of imaginary social relation with the represented participants. The viewer is however asked to examine or look at the represented participants as objects for uninvolved viewing, objects which really have no socio-relational call on the viewer. In visuals where offers are being made, the represented participants are always looking away from the viewer - there is no look being projected directly at the viewer. This kind of image is an offer because "it 'offers' the represented participants to the viewer as items of information, objects of contemplation, impersonally, as though they were specimens in a display case" (op.cit:124).

4.2.2.2 Social Distance

Visually-based interactive resources are also used to determine how much *social distance* there is between the viewers and the represented participants. Social distance is concerned with the kinds of social relations between interactants, whether they be long-term types in which they may be considered as intimates, friends, colleagues, acquaintances, total strangers, or even aliens (in a cultural sense), or short-term relationships which last only as long as the actual communication act, and are largely context-dependent. Kress and van Leeuwen suggest that the use of size of frame, in a similar way to the ways it is used in cinematography, can be used to convey a sense to the viewer of his or her social closeness in relation to the represented participants (op.cit:130-135). These social relations are realised by varying the size of frame through the use of very close-up

shots, close-up shots, medium shots, and long or distance shots, all techniques which derive from cinematography and photography. These techniques are used even when the participants represented may be complete strangers to the viewers. In most cases (especially in a magazine like *The Economist*), the represented participants are complete strangers to the viewers, although they may well be famous people who are in a popular media sense well known to them (as in pop stars, politicians, sports stars, etc.). Whether they are known to the viewers or not in this populist sense however is not important in determining the choice of frame size. In visuals, the social

> relation between the human participants represented in images and the viewer is once again an imaginary relation. People are portrayed *as though* they are friends, or *as though* they are strangers. Images allow us to imaginarily come as close to public figures as though they were our friends and neighbours - or to look at people like ourselves as strangers, 'others' (op.cit:132).

The ways these differences in social relation are realised in visuals portraying human represented participants is realised by the choice of a type of shot from a continuum of shots. These are summarised in Table 4.3.

FRAME SIZE	CHARACTERISTICS	SOCIAL RELATION
very close up	less than head and shoulders of subject	intimate
close shot	head and shoulders of subject	friendly or personal
medium close	cuts off subject approximately at waist	social or ' one of us'
medium shot	cuts off subject approximately at knee level	'familiar' social
medium long	shows full figure	general social
long shot	human figure fills half image height	public, largely impersonal
very long shot	and any thing beyond (wider) than half height	little or no social connection

Table 4.3 Size of Frame and Social Distance (op.cit:130)

Kress and van Leeuwen suggest further that the methods used to create a sense of social distance can also be applied to the representation of objects and of the environment, a suggestion not given in *Reading Images* (1990). They tentatively express the idea that

> at least three significant distances can be distinguished, and that there are correspondences between these distances and our everyday experience of objects and of the environment, in other

> words, that size of frame can also suggest social relations between the viewer and objects, buildings and landscapes (Kress and van Leeuwen 1996:134).

Thus, a close-up shot implies engagement, that the object can almost be touched or used, a middle distance shot gives a sense of more distance and less engagement, while a long distance shot suggests that the object is there for the viewer's contemplation only, and that there is no possibility of engagement beyond this. This is an area that is explored more fully by O'Toole's (1994) work on the language of displayed art, which will be discussed in section 4.3 in this chapter.

4.2.2.3 Attitude

In their discussion of the ways that certain visual resources can be used to express an *attitude* or 'point of view' towards the represented participants in visuals, Kress and van Leeuwen examine the importance of the system of (central) *perspective*, and how it is used to express subjective attitudes. Perspective is defined as a graphic design technique used for depicting volumes and spatial relationships on a flat surface, in such a way that the represented objects appear to the eye as a typical visible scene with respect to the viewed objects' relative positions and distance (Random House 1992). The system of perspective was developed during the Renaissance, a period when individual expression of one's point of view and subjectivity were inculcated as worthwhile social values. Kress and van Leeuwen assert that since the Renaissance there have been two kinds of visuals in Western cultures. There have been the *objective* (without perspective - no built-in point of view), and the *subjective* (with central perspective - carrying a built-in point of view).

Subjective visuals project a very clear distinction between the represented world, which requires most of the viewer's attention, and the frame or physical space in which the image is viewed. In these types of visuals there is an attempt to create a division between the visual and its environment, to emphasise its main features as opposed to the features of its background (Kress and van Leeuwen 1996:136). In *objective* visuals however, taking account of the viewer is ignored and there is a disregard of any reference to the viewer in terms of who or where he or she is, or

the actual time setting. The designer of the subjective visual has selected the point of view for the viewer, and consequently there is a kind of designer-to-viewer relationship set up whereby the point of view of the designer, via the imposed point of view in the represented participants in the visual, is 'forced' onto the viewer. As Kress and van Leeuwen state, the "perspectival image compels the viewer to become, together with the institution that has produced the image, an 'us' with respect to a 'them' or an 'it' - that is, with respect to the participants represented in the image" (Kress and van Leeuwen 1990:32).

Kress and van Leeuwen examine aspects of the subjective features of visuals in depth, dividing them into two possible simultaneous choices which they refer to as degrees of *involvement* and *power*. In the former there can be either involvement or detachment, and in the latter there can be viewer superiority, viewer equality, or viewer inferiority. Both the categories of involvement and power are realised through various choices of visual *horizontal* and *vertical angle* respectively. The *horizontal angle* relates to the interaction between the frontal plane of the visual designer or producer (as in a photographer) and the frontal plane of the represented participants. The are a number of possibilities here. They can have parallel alignment, and thus have a *frontal* point of view, or they can be at an angle, and thus have an *oblique* point of view. This frontal to oblique distinction may be seen as a continuum of *degrees* of obliqueness, as opposed to a strict either/or dichotomy, and is related to the relative placement of *vanishing points*. Vanishing points are the points at which receding parallel lines appear to converge, and can be derived when lines are drawn through the visual along the perceived linear arrangements of the participants. They are important in that they control the *direction* of view (Porter and Greenstreet 1980:76). This is illustrated in Figures 4.1 and 4.2.

A frontal angle occurs when the vanishing point(s) can be placed within the vertical boundaries of the visual, as shown in Figure 4.1, whereas an oblique angle occurs when the vanishing point(s) can be placed outside the vertical boundaries of the image, as shown in Figure 4.2. The range of oblique and frontal angles presents different degrees of *involvement*. The horizontal angle of a visual

therefore encodes whether or not the graphic designer (and concomitantly the viewer) are in some

Figure 4.1 - The frontal angle (Montague 1993:8)

Figure 4.2 - The oblique angle (Dondis 1973:49)

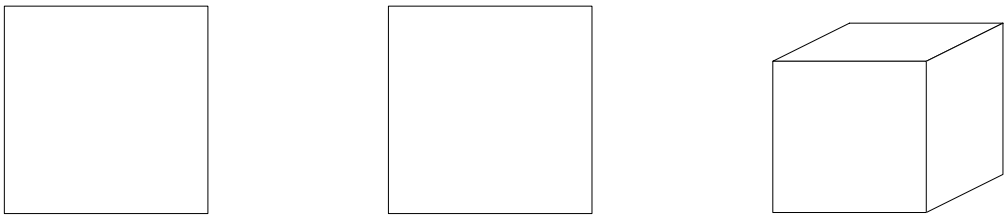
kind of relationship with the represented participants or not. The *frontal* angle projects a message of inclusion, suggesting that the represented participants are part of the viewer's and visual designer's world, while the *oblique* angle projects a message of exclusion, suggesting that the represented participants or the scene is not part of their shared world, and as a result there is a lack of involvement (Kress and van Leeuwen 1996:142-143).

The vertical angle is an important element in interpersonal meanings in visuals in that it allows for the establishment of power relations between the viewer and the represented participants. These relations are also important in cinematography, and operate in the ways that visuals attempt to project meanings. The major difference is that the viewer is the subject of having or not having the power, rather than the participants in a film or video. Thus, if the represented participant is viewed by the viewer from a high angle, or from 'above' as it were, then the interactive participant (the viewer) is deemed to have a more powerful position relative to the represented participant. The relation is reversed when the angle is one of the represented participant being in a lower position. Further, if the represented participant is at the same level as the interactive participant, then the relation is one of equality, or of neutral power. As in the horizontal angle and degrees of involvement, the power relation is a continuum, or a matter of degrees of power (op.cit:146-148).

In many visuals there is no immediate, obvious point of view or social relation from the interactive viewer's perspective to be ascertained, but a couple of likely possibilities. In *The Economist* magazine there are many examples of a medium-long to long shot of a scene taken from a relatively high vertical angle and an oblique horizontal angle which do not suggest a clear role for the viewer. In these visuals the vertical angle may suggest a position of power over the represented participants, but the oblique horizontal angle may mediate that effect by suggesting a lack of involvement with the participants depicted, or an exclusion of that situation. Potential social roles for the viewer could cover a range of possibilities, ranging from some position of power to that of an observer or

reporter who observes the scene from a superior, yet dispassionate stance (op.cit:148).

In the older forms of *objective* visuals which Kress and van Leeuwen discuss, there is no built-in point of view but a desire to present all the information necessary to the viewer, even at the expense of deforming the laws of naturalistic depiction (op.cit:136). The more modern examples of *objective* visuals include scientific and technically-based visuals, as in technical graphics and drawings, maps, and charts. Many of these encode an objective attitude through the use of either a directly frontal, or perpendicular top-down angle, which "do suggest viewer positions, but special and privileged ones, which neutralise the distortions that usually come with perspective, because they neutralise perspective itself" (op.cit:149). As can be seen in Figure 4.3, a cube viewed from the directly frontal angle looks simply like a square, and the same cube viewed from a perpendicular top-down angle looks the same.



(1) From the front. (2) From above. (3) From frontal-isometric perspective

Figure 4.3 Cube views. (Montague 1994:33,35; Kress and van Leeuwen 1996:149,152)

However, viewing this same cube from a perspectival point of view, the sides and top can be seen, and because of perspective there will be some degree of distortion, the level of which will depend on the encoded angle of the viewer (loc.cit.). The graphs, charts, and tables used in *The Economist* magazine are all presented from the directly frontal angle, and the occasional maps used from a perpendicular top-down angle.

These directly frontal and perpendicular top-down angles do not project their sense of objectivity in the same manner, however. The directly frontal angle is "the angle of maximum involvement" which in many other contexts is "the angle of 'this is how it works' 'this is how you use it', 'this is how you do it'" (loc.cit.).

It is an angle commonly used in schematic drawings for example, which are concerned with showing, instructing and informing its viewers about situations, processes and actions (as in a picture showing the parts of a video deck, or instructions on how to make bread for a bread-making machine). In the case of *The Economist* magazine, it is also the angle used to say 'this is how it is', or 'these are the facts'.

4.2.2.4 Modality

The final aspect that Kress and van Leeuwen examine in their discussion of interactive meanings in images is that of visual *modality*. Drawing once again on a linguistic interpretation, in which modality is defined as the resource used by speakers or writers to express judgements about the truth or credibility of propositions in verbal communication, they assert that various forms of visual communication also utilise a continuum of techniques to express modality. Thus, "visuals can represent people, places and things as though they are real, as though they actually exist in this way, or as though they do not — as though they are imaginings, fantasies, caricatures etc." (op.cit:161). An important point too is that like the linguistic, visual modality is considered to be an aspect of interactional and not ideational meanings, because what one group or culture considers credible may not be judged the same way by another group or culture; and so, "modality judgements are social, dependent on what is considered real (or true, sacred) in the social group for which the representation is primarily intended" (loc.cit.). This can be seen in the differences between the ways that photographs as opposed to diagrams are considered as 'real' by different audiences. This difference is an indication of the fact that "reality is in the eye of the beholder; or rather, what is regarded as real depends on how reality is defined by a particular social group" (op.cit:163).

To clarify this point, Kress and van Leeuwen consider the differences between naturalistic and scientific realism. In the former, which Kress and van Leeuwen claim is the dominant standard or criterion for what is considered 'real' in western society and according to current technologies for representation and production, reality is defined on the basis of how accurately what is portrayed approximates

what would be seen with the naked eye. Thus, reality is defined by the existing technology provided by the capacity of 35mm photography (loc.cit.). In the latter, in scientific realism, reality is defined based on the 'generic' nature or 'regularity' of the characteristics of represented objects. What can be simply observed with the naked eye is the beginning point — in scientific realism there is an attempt to represent things beyond what can be seen in reality, to represent objects according to what they do in terms of processes (as in a Water Cycle diagram in a Geography textbook or more abstractly, a line graph in *The Economist*), or internal structures (as in an architectural schematic). Each of these realisms, the naturalistic and the scientific, has its own views of what is real and what can be considered as not real, but the dominant one is the natural: "although different realisms exist side by side in our society, the dominant standard by which we judge visual realism and hence visual modality, remains for the moment, naturalism as conventionally understood, 'photo-realism'" (loc.cit.).

Kress and van Leeuwen examine *naturalistic* modality in terms of a series of *modality marker* continuums or scales (op.cit:165). All are relevant and applicable to the interpretation of the kinds of visuals used in *The Economist*, and cover such areas as:

1. the use of colour variation
2. contextualisation
3. representation
4. depth
5. illumination
6. brightness

The *use of colour variation* is an important method for expressing visual modality in that the more that colour is reduced, the lower the modality. One continuum of visual modality in colour is *colour saturation*, which relates to common standards of photographic naturalism and runs from full colour saturation to a complete absence of colour (as in black and white visuals where the only variation in the colours is in terms of brightness) (op.cit:164-165). Another scale is *colour differentiation*, which is a scale ranging from full colour differentiation in the visual to what may be termed a 'reduced palette', and then to monochrome (op.cit:165). There is also *colour modulation*, a continuum running from

modulated (using many different shades of a single colour) to a single plain, unmodulated or flat colour. The principle for all scales is the same: the more the colour is abstracted from naturalistic presentation, the lower is the modality.

Contextualisation refers to the degree to which a setting is presented in a visual (loc.cit.). When a represented participant is shown with no setting, then it is in a sense in a void, and is thus presented generically as a typical example of its type, rather than as something with an individuality which is peculiar in a contextual sense. In naturalistic images, the absence of context lowers the modality and there is a continuum from the presentation of a full setting to no setting. Within this continuum there are degrees of contextualisation ranging from a full contextual representation to varying degrees of de-focused settings, or settings which are under or over-exposed, thus reducing their clarity. Other variations may include the use of a minimal number of setting variables to give the suggestion or implication of a setting, with the rest of the frame totally blank. Further along, there may be just irregular shading or patterning, or a regular pattern of light shapes for example. At the extreme end is the absence of setting; there is totally unmodulated colour, a black background, and most commonly, a blank or white background.

Representation relates to the effect of differences or variations in detail between the foreground and background in a visual, and can be interpreted as a scale running from maximum abstraction to maximum representation of pictorial detail (op.cit:166). A visual may show the finest details of the represented participants, or it may show various levels of abstraction away from this detail. The effect of reduced representation, or a reduction in detail in the background or setting may lead to a decrease in the modality of the setting, and concomitant increases in the modality of the foreground. For example, some of the finest details of the represented participants may be shown, such as wood grain, skin texture, hair strands etc., while the background may have lesser degrees of detail, leading to a variation in the modality between background and foreground.

Depth, *illumination* and *brightness* are all important modality markers for naturalistic images, especially in examples from portrayed art and in photography (though not especially for *The Economist* magazine visuals). With regard to the use of *depth*, the highest modality accrues to the use of central perspective, (frontal angle only which displays the front of the visual in an attempt to represent optical reality and engage the viewer in seeing a realistic image of physical space). Degrees of lesser modality derive from this, ranging from the angular-isometric perspective, to the frontal isometric perspective, and finally to the depth created by simple overlapping (see Arnheim 1974:262-285; Saint-Martin:128-144; Kress and van Leeuwen 1996:152-153).

Variations in *illumination* project different meanings depending on the techniques used. In naturalistic images, participants are represented in relation to the sources of illumination, with highlighting used to draw the viewers' attention to particular aspects or participants within the visual frame, while in some less naturalistic images there may be abstractions from illumination, with shadows or shading being used to allow just enough to convey the volume or shapes of objects (Kress and van Leeuwen 1996:167). Other uses of shadowing or shading may be to indicate areas that recede into the distance, or the use of highlighting to emphasise prominent areas. Within this shading technique there are also degrees of illumination, ranging from a full or modulated darkening of the shadowed areas to the use of dotting or hatching of the shading, to light and shade being completely abstracted away to the use of only lines rather than shading to indicate the receding contours of a visual feature.

The scale of *brightness* values which may be used in a visual ranges from a large number of different degrees of brightness to only two, that of black and white, two shades of grey, or two brightness values of the same colour (loc.cit.). There is also a variation in the ways that brightness can contrast with other scales of brightness, as in an extreme contrast between the darkest and lightest areas of a visual, or where there is a slight variation in brightness values, giving a hazy or misted effect.

From the above discussion of modality markers in naturalistic visuals, it follows that the determination of visual modality is "realised by a complex interplay of visual cues. The same image may be 'abstract' in one or several dimensions and 'naturalistic' in others, …… yet from this diversity of cues an overall assessment of modality is derived by the viewer" (op.cit:167-168). Also, naturalistic visuals are, according to Kress and van Leeuwen, the dominant standard for visual modality "in our culture", and are a "yardstick for what is perceived as 'real' in images, even when they are not photographs", a point which is relevant for the analysis of *Economist* magazine sketches (op.cit:168). However there are instances where this dominant standard for what is 'real' does not apply in every context — there is another continuum of visual modality however which relates to the use of visuals in *scientific/technological* contexts. What is 'real' in these contexts may often be very different to what is considered to be real in terms of photographic/artistic naturalism. Reality in this context is calculated according to the tenets of science, which generally deals with concepts of number, weight, and measurement, as in blueprints or schematic diagrams showing how a machine may operate, or graphics which display quantitative data and relationships between phenomena. There are two other important contexts, besides the *naturalistic* and *scientific/technological* which Kress and van Leeuwen only briefly include in their work. There are firstly instances where a photographic visual attempts to appeal to *sensory* qualities in attempt to generate in the viewer some appreciation of the reality of such sensory qualities as texture, colour and 'feel', and there are the contexts of abstract art where there is usage of *abstract* realism in visuals.

These four visual contexts and their relative modalities are defined as *coding orientations*, or "reality principles" by Kress and van Leeuwen (op.cit:170). These concepts and the terminology used are referenced to the work of Jurgen Habermas (1984) and Bourdieu (1986), as well as to Bernstein (1981), from whom the term 'coding orientation' has been borrowed. Coding Orientations are defined as "sets of abstract principles which inform the way in which texts are coded by specific social groups, or within specific, institutional contexts" (Kress and van Leeuwen 1996:170).

These four Coding Orientations are summarised below.

Visual 1: Unemployment - Little shop of horrors plant
(*The Economist,* April 25th 1992, p57).
(reproduced)

1. **Scientific/technological coding orientation** - the dominant principle here is the efficiency of the image as an outline or blueprint for explanation, description etc. The use of colour generally means a lower modality, unless it is useful in explaining the image's features more efficiently.

2. **Sensory coding orientation** - the dominant principle here is the provision of sensory pleasure in such contexts as visuals for art, fashion, cooking etc. The use of colour attracts high modality, and is related to the ways colours can be used to influence the viewers' emotions (as in 'hot pink', 'soothing pastels' and 'peaceful blues').

3. **Abstract coding orientation** - the dominant principle here is the ability to visually reduce the individual to the general, the concrete to its essential basic qualities. This is the coding used by 'educated sociocultural elites', in areas such as 'high art' and in some scientific and academic contexts etc. The ability to use this orientation is the mark of social distinction, of being an 'educated person' or a 'serious artist'.

4. **Naturalistic coding orientation** - the dominant coding in society, the one which all members of the society share because they are being addressed as fellow members, no matter what level of education they have received, or their social status.

In terms of the application of these coding orientations to *The Economist* magazine, the Naturalistic and the Scientific/technological coding orientations are the most applicable and therefore useful for the interpretation of this magazine's multimodal text. Also, as the brief analysis below shows, many of the interactive meaning realisations in images which Kress and van Leeuwen identify are applicable to *The Economist* magazine visuals.

As already shown in the section of representational meanings, visuals are multidimensional in that they simultaneously utilise a range of different visual processes in order to address their viewers. Visual 1 (reproduced once more here) is again a good illustration of this kind of complexity in interactional terms. An analysis of this visual reveals that it is firstly an offer of information which the viewers can either accept or refuse. This interpretation is supported by the fact that the overhanging plant and the human participants are directing their gaze at the other participants in the visual frame, the little shoots (and not the viewers). This is therefore a depiction or a scene for the viewers to simply observe, a scene which can be interpreted as being a medium to long shot in terms of the size of

frame, which requires viewers to look at it from a frontal angle and at the same level position. This therefore requires of the viewers an attitude of little involvement with, and relative detachment from, the represented participants. This visual can also be interpreted in modality terms regarding its acceptability as a believable exemplar of its type as a naturalistic visual. This can be carried out in accordance with the various modality marker continuums which Kress and van Leeuwen identify. Thus, the fact that this hand sketch has no colour, but is a monochrome visual which approximates real people and combines them with fictional characters, is supported by the relative absence of any background, by the abstraction from reality afforded by the use of sketching and caricaturisation, and the relative absence of illumination and brightness to highlight the scene and the action. This suggests that this visual obviously has less modality than either a colour or monochrome photograph in the naturalistic coding orientation from which it has been derived.

The applicability of these interactional realisations in Kress and van Leeuwen's work to visuals from the scientific/technological coding orientation in *The Economist* magazine is not so obvious however. This is because in their discussion of interactive meanings in visuals, Kress and van Leeuwen concentrate heavily on naturalistic visuals, almost to the exclusion of visuals from other coding orientations. Indeed, all of their illustrative examples in this section of their book are naturalistic. It would seem, however, that the only applicable interactive realisations for these scientific/technological visuals would be in terms of the presence or absence of Colour (the use of colour in these would mean less modality), in terms of Attitude (as in a top-down angle where the viewer is looking down at a flat surface or a page which encodes a knowledge orientation), and in terms of the degrees of Representation of detail (where the delicacy of analysis or complexity of the data shown would affect the acceptability of a graph as a believable instance).

4.2.3 Compositional Meanings

Up to this point this review has discussed and evaluated Kress and van Leeuwen's description of the ways that various kinds of visuals organise and represent their meanings representationally (ideational), and the ways that visuals attempt to address their potential viewers in interactional (interpersonal) terms. These have been examined from the point of view of features which would be most useful for the analysis and interpretation of *The Economist* magazine visuals. This section now deals with a discussion of the relevant *compositional meanings* (textual) in their visual grammar. In this area, Kress and van Leeuwen analyse the ways visuals are composed or structured, and the kinds of meanings conveyed by the various possible compositions. These include single mode forms, as in the composition of just a single visual, and multiple mode forms, as in the composition of a text comprising one or more visuals and accompanying verbal text. It is their treatment of this latter composition type which is specifically of relevance to the focus of this study on *The Economist* magazine text, since the single mode form is really only used on the magazine's front page. Kress and van Leeuwen refer to multiple mode forms as *multimodal* texts, in that the meanings embodied within are realised via differing semiotic codes (Kress and van Leeuwen 1996:183).

The compositional features in multimodal texts (in *Reading Images* the term *composite* texts was used, and Kress and van Leeuwen now seem to use both terms interchangeably) are related to the principles of layout, or the "way in which the representational and interactive elements are made to relate to each other, the way they are integrated into a meaningful whole" (op.cit:181). Kress and van Leeuwen raise the question of how the products of the various codes operating in one text should be examined; whether the meaning of the whole should be viewed as the sum of the meanings of its parts, or whether they should be viewed in an interactive way, such that the textual parts should be viewed as interacting with and affecting each other (op.cit:183). Kress adopts this latter view, as does this study. Thus a single image, or a whole page which contains both image(s) and verbal text (or even sometimes a series of pages in a magazine spread), is therefore treated as an integrated text, which is the result of the "work of an overarching code whose rules and meanings provide the composite text with the

logic of its integration" (loc.cit.). Kress and van Leeuwen recognise that there are two such integration codes: that of *Layout*, or the code of spatial composition, and that of *Rhythm*, or the code of temporal composition. *Layout* is concerned with texts whose elements are spatially co-extant but in a sense time frozen, as in print-mode magazines such as *The Economist*, and in maps and art works, while *Rhythm* is concerned with texts which develop over time, as in speech, music, and the dance etc. (loc.cit.). As this study is concerned with analyzing a multimodal text from *The Economist* magazine, the discussion which follows will be concerned only with the relevant aspects of the *Layout* integration code in visual composition. In both a single mode (one image) and a multimodal text (image plus verbal), this code is essentially concerned with the relative placement of the represented participants, their placement in terms of top and bottom, left and right, how much to the top or bottom, or how much to the left or right, and in terms of perspective, or how much is foregrounded and how much is in the background. Arnheim (1988) claims that there is a strong physiological element to the interpretation of this layout code, in that it is based on the viewer's kinaesthetic sense of balance and weight. Taking this notion one step further in terms of Halliday's SFL model, Kress and van Leeuwen suggest that the "fundamental function of integration codes such as composition is textual. Integration codes serve to produce text, to place the meaningful elements into the whole, and to provide coherence and ordering among them" (1996:212).

Again, Kress and van Leeuwen draw heavily on the work of Arnheim (1974, 1988) on pictorial design and visual (gestalt) perception, Dondis (1973) on the fundamentals of visual literacy, and indirectly on Uspensky (1973) on the poetics of composition in classical art, for describing the kinds of meanings that are compositionally organised in visuals. In *Reading Images* (1990:95-98) they identify six important structuring principles in layout. These are stated as salience, *balance*, *vectors*, reading paths, *framing* and *perspective*. They also discuss the importance of the vertical and horizontal compositional axes, which are pinpointed as two important basic organising principles in the visuals produced in Western cultures (Arnheim 1988; Kress and van Leeuwen 1990:95). In *The Grammar of Visual*

COMPOSITION SYSTEM	GENERAL FEATURES
Information Value	The placement of the elements (participants and syntagms that relate them to each other and to the viewer) endows them with specific informational values attached to the various 'zones' of the image: left and right, top and bottom, centre and margin.
Salience	The elements (participants and representational and interactive syntagms) are made to attract the viewer's attention to different degrees, as realised by such factors as placement in the foreground or background, relative size, contrasts in tonal value (or colour), differences in sharpness, etc.
Framing	The presence or absence of framing devices (realised by elements which create dividing lines, or by actual frame lines) disconnects or connects elements of the image, signifying that they belong or do not belong together in some sense.

Table 4.4 Interrelated systems of compositional structuring principles (loc.cit.)

Design (1996) however, these structuring principles are conflated into three interrelated systems which relate the "representational and interactive meanings of [a] picture to each other" (1996:183). These structuring principles are reproduced in Table 4.4, and will be examined in terms of their applicability not only to single mode visuals, but also to the multimodal texts which occur in *The Economist* magazine (texts which include both images and verbal text, be it within a visual frame, or across a whole page or series of pages). Each of these compositional systems will now be discussed in turn.

4.2.3.1 Information Value

The horizontal axis in a visual has been referred to previously with reference to degrees of involvement, but it is important also because it generates a left-right distinction in the structural meanings within multimodal compositions that can have an influence on the information value accorded to the various visual elements. Kress and van Leeuwen examine the continuous movement between left and right in horizontal layout structure

in a number of multimodal magazine articles, and based on their examination assert that generally

> when pictures or layouts make significant use of the horizontal axis, positioning some of their elements left, and other, different ones right of the centre (which does not, of course, happen in every composition) the elements placed on the left are presented as Given, the elements placed on the right as New (op.cit:187).

The meaning of this horizontally-based left-right structure is that the left approximates the well-established, known, understood, implicitly held view (or the Given), and the right approximates that which is contestable, to-be-established, presented as not yet known, to be agreed upon, or to be made explicit (or the New) (loc.cit.). In stating so, Kress and van Leeuwen draw upon Arnheim's (1988:47) discussion of "the tendency, largely unrelated to actual eye movements, for viewers to perceive pictures as organised from left to right, so that the lower-left corner appears to be the composition's point of departure [my emphasis]". They also establish a direct link to Halliday's (1994) discussion of the structure of the information unit, which consists basically of two functions, the Given and the New. The Given is referred to as that which is recoverable, what is already known,

or what the speaker/reader is able to access. It may be something which has been mentioned or shown before, or something in the context of situation. As Halliday puts it, "the meaning is: this is not news" (1994:298). The New is that which is not recoverable in the sense that it has not been mentioned before, or it is unexpected. According to Halliday, "the meaning is: attend to this; this is news" (1994:298). Thus, Kress and van Leeuwen assert that there is a deal of similarity between the sequential nature of information in verbal language and the horizontal structuring of visual layout.

Kress and van Leeuwen also claim that in many multimodal magazine layouts the left-hand space of the Given is usually taken up by verbal text, while that of the New (right-hand) is often taken up by one or more images, with the images providing a way of quickly and directly letting the viewers know what is the new information coming. Kress and van Leeuwen comment however that there are exceptions to this verbal-visual, Given-New ordering, such as instances where the image is presented as the Given and the New is the verbal text. They discuss specific instances to show that the realisations of this Given-New distinction are not always predictable, as in an advertisement with an image of a Mercedes car placed on the left-hand side as the Given (an assumption that viewers see a Mercedes as a socially accepted symbol of prestige and wealth) and the description of its features in verbal text on the right-hand side as the New (Kress and van Leeuwen 1996:189).

These Given-New principles also apply to single naturalistic images, within the visual frame, where the represented participants are sometimes vectorially arranged and related in such a way that the left hand participant is recognisable as a Given and the right hand as a New piece of information (op.cit:190). Conceptual diagrams can also be organised according to these Given-New principles. This may be where information is spatially arranged and joined by arrows to show a process of movement from left to right (as in a model of communication between company offices, although these can go in either direction), and more definitely to graphs where information is commonly arranged according to chronology, with the earlier (Given or known) information placed on the left, and the most recent or

current information (the New) placed on the right hand side. This is an aspect of reading path which will be further developed below (also see Arnheim 1988:47 on the constraining influence of the mechanism of human vision). This Given-New mechanism can also be seen in various line graphs which include an element of prediction of trends based on the behaviour of data in previous time periods. In those graphs which have that predictive element, the Given is the past figures (for example, the unemployment rate from 1945 to the article date), while the New is the predicted movement of the same data beyond the article date. This kind of predictive line graph is very rare in *The Economist* magazine — those commonly presented almost invariably reproduce the relevant data up until the date of the particular issue in which it appears (see Visual 2), and do not attempt to depict the ways that the data could behave in the future (although they do attempt this is various verbal ways).

The vertical axes in visuals are another aspect of information value, which is of importance in the ways that they generate a top-bottom distinction in the structural meanings within visual compositions. There is often a difference in modality between the tops and bottoms of visuals that is conveyed by oppositions between the visual's two halves. This verticalised difference can be realised by a variety of methods, such as framing, differences in focus, colour saturation, salience, blank spaces etc. Drawing heavily again on Arnheim's (1974:182-187, 1988:109-148) work on bipolar composition and the relative visual weightings in art work produced by the horizontal and vertical axes, Kress and van Leeuwen hypothesise that in Western cultures (other cultures may utilise a differing structuring), a common compositional structuring involves the top of a visual occupying a special place, which is the space of the 'ideal' or most highly valued, with the bottom of a visual occupying the place accorded to the 'real' or less highly valued (1996:193). This Ideal-Real structure, (in the same way as the Given-New structure) also applies to both the composition of single images as well as composite layouts involving image(s) and verbal text. Kress and van Leeuwen illustrate this with examples drawn from advertisements in magazines and illustrations from science high school textbooks. Their rendering of the meanings of structuring along the vertical axis is summarised in Table 4.5.

TOP	
space of the ideal most highly valued salient	
In advertising: images promise	In science: the abstract the general/generic
BOTTOM	
space of the real, the 'here and now' less highly valued less salient	
In advertising: language (verbal) product	In science: the empirical the specific

Table 4.5 Verticalised Ideal-Real meaning in multimodal texts

It is also important to note that often there are often bridging forces between two opposing halves of visuals, forces which attempt to connect the two opposing meanings in a kind of visual syntagm or unit of meaning. These can function to form a bridge between the real and ideal, to lessen or modulate the division — this is exemplified by Kress and van Leeuwen via the analysis of an advertisement in which the verticalised difference between an image of a woman in a relaxing bath (top) and the stark verbal text (bottom) is minimised by the vectors formed by her gestures, which point to the verbal text extolling the virtues of the herbal bath product (loc.cit.). Although visually there is a strong division between the image and the verbal text, this division is lessened so that the whole composition can be viewed as a single visual syntagm. In many magazines like *The Economist* this formation of a visual syntagm is often achieved through the use of a verbal *run-around*, where the verbal text is forced to shape itself around the visual or one of its represented participants, or where the visual in a sense invades the space of the verbal.

If Kress and van Leeuwen's hypothesis is accepted, that in Western cultures a common compositional structuring is that the top of a visual is the space of the 'ideal' or most highly valued, and the bottom is that of the 'real' or less highly valued, then some relevant comments can be made about observable patterns in

The Economist magazine with regard to the placement of visuals vis à vis verbal text. A glance at any issue will show that in the various departments (Asia, American Survey, International, Europe, Britain, Business, Finance, and Science & Technology) there is a strong tendency to place visuals in the top left hand corners of each leader article. This is especially so of the Finance Department, which is the source of the text analysed in this study. Accepting Kress and van Leeuwen's hypothesis also means that the placement of a visual in the top half of a leader page would suggest that the graphic designers at *The Economist* magazine are presenting their most highly valued or salient meanings in that place. The fact that this is often done through sketches which include a strong element of caricaturisation or wry humour is important and will be discussed more fully in Chapter Six, which presents a visual typology for *The Economist* magazine and the results of an interview with the Chief Editor of Graphic Design at *The Economist* magazine headquarters in London.

A third aspect of information value of note here is the importance of the central spaces and outer edges in images and multimodal texts. This is an aspect of visual composition which is pivotal to Arnheim's gestalt-based theory of composition, in which he refers to two opposing forces in composition, that of *centricity* and *eccentricity*. These "differentiate between compositional forces related to an internal centre and others acting in response to an external centre" (1988:viii). Kress and van Leeuwen adopt the terms *Centre* and *Margin* in order to explain the ways that some images and composite (multimodal) texts place elements in the centre of a layout, in order to signal to the viewer that

> something to be presented as Centre means that it is represented as the nucleus of the information on which all the other elements are in some sense subservient. The Margins are these ancillary, dependent elements. In many cases the Margins are identical or at least very similar to each other, so that there is no sense of a division between Given and New and/or Ideal and Real elements among them (1990:206).

As mentioned above, the compositional structuring principles are conflated into three interrelated systems of information value, salience and framing. Thus, the Given/New and Ideal/Real can combine with the principle of Centre-Margin to

provide a composite layout which signals its primary messages through the relative salience of its elements or through framing devices. Kress and van Leeuwen also make the point that some of these visual compositional structures have no real counterpart in language. They suggest that

> while language has a specific grammatical form for realising the Given-New structure, this is not the case with the Ideal-Real and Centre-Margin structures. This is not to say that the meanings these structures express cannot, in some form, be expressed in language, but rather, that they are more readily and frequently expressed visually, and that language, unlike visual communication, has not developed 'grammatical' forms to express them. (1996:211)

The dimensions of visual space, incorporating all three aspects of the horizontal and vertical axes, as well as the central position, are reproduced in Figure 4.4.

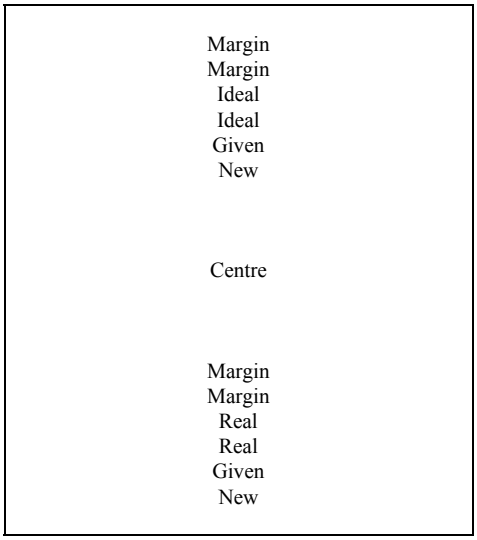


Figure 4.4 The dimensions of physical space (op.cit:208)

Examples of the principle of Centre-Margin operating in layouts in *The Economist* magazine are quite common in departmental leader articles, where the centrepiece of an article is either a photograph or a sketch, and the verbal text is symmetrically arranged around it. This is suggestive of the kind of semantic connection which, it is argued in this study, is one of the mechanisms by which intersemiotic complementarity is realised.

SALIENCE INDICATOR	FEATURES
Size	larger objects are more easily noticed by the eye that smaller ones.
Sharpness of focus	objects are more clearly seen because their features are in sharp focus and are more easily noticed by the eye than those which have their features less sharply focused.
Tonal contrasts	areas of high contrast, for example black borders placed on white spaces are higher in salience than a grey-shaded, less distinct border performing the same dividing function.
Colour contrasts	the contrasts between highly saturated colours and softer muted colours, or the contrast between red, white and blue.
Placement in the visual field	the aspect of visual 'weight' - objects are 'heavier' when close to the top, and 'heavier' when placed on the left.
Perspective	objects or entities placed in the foreground are visually more salient than those in the background, and elements which overlap others are more salient.

Table 4.6 Visual 'clues' for Compositional Salience (op.cit:212)

4.2.3.2 Salience

Besides the relative placement of elements on the page and the information value accorded to them, there is also the relative importance bestowed on them by the different degrees of Salience. Salience refers to the ability of a viewer to make judgements about the importance of various elements in a visual in relation to the other elements, and is related to the viewer's ability to judge the 'visual weight' of these various elements. One of the important functions of the compositional integration code is to convey to the viewer the relative significance of visual elements via an hierarchy which induces the viewer to focus attention on some elements more readily than on others. Arnheim (1988:15-21) discusses an aspect of this in regard to the appearance of 'heaviness' in objects placed in the top of a layout as opposed to the bottom (the higher objects appear 'heavier'), and on the 'weightiness' of the left-hand side of a visual frame — the impression that objects which are placed in the left-hand side of a visual frame as opposed to right placement are heavier is due to an "asymmetry of the visual field" (op.cit:47). This has already been discussed in relation to the horizontal axis and Given/New information structure in composition. Thus, the greater the weight of an element in relation to others, the greater its salience. According to Kress and van Leeuwen, salience is not an objectively measurable quality, but is the result of a complex interplay between various visual elements which act as 'clues' to let the viewer know what is important, and what is more important than other elements (1996:212). These 'clues' are summarised as Salience Indicators in Table 4.6. All except *colour contrasts* are relevant to the analysis of *Economist* magazine visuals, although conceivably this indicator could be applied to the contrast between black and white in monochrome images.

Another aspect of the ways that viewers are required to judge the visual 'weight' of the elements of a composition covered by Kress and van Leeuwen, is what Arnheim refers to as the perception of balance or stability created by the *balancing centre* (1988:66,109-119). This relates to the ability of the viewer to make perceptual judgements about the salience (or relative weights) of various visual elements in combination, so that there is a sense of balance amongst the elements emanating from a central point or core. This means that within some

visuals there is a point which could be deemed to be the centre, and it is often the area which contains or projects the central message. It may be in the actual centre or off-centre in the visual, but its salience and 'weight' projects its importance, and it can also have an effect on the areas in the visual which surround it (Kress and van Leeuwen 1996:213).

4.2.3.3 Framing

Framing is another aspect of composition which works in combination with information value and the different degrees of salience organised within visuals. Framing refers to the degrees of connectedness or boundedness provided by an actual frame or frame lines around a whole visual, or around the elements in a visual. Within a single visual or multimodal (composite) text the elements or groups of elements presented can be connected or joined together by various graphic techniques, giving a strong sense that they 'go together', that they should be viewed as part of the same message; or they can be marked off or disconnected from each other, conveying the sense that they should be viewed (read) separately (op.cit:214). The ways that this separation can actually be interpreted depends on the context. For example, framed double pictures of two people can convey the sense that the subjects should be read as being 'together' in some way, the nature of that connection being revealed by a reading of the verbal text accompanying the framed images. If the two photos are clearly marked off from the surrounding verbal text, this may suggest that there is some kind of semantic separation — and the nature of the connection and the separation will largely be provided by the verbal context. The context thus "colours in the more precise nature" of these interpretations (op.cit:215).

Framing can also be realised by elements within a visual which convey the sense of boundedness around, or separation from other elements through their actual shape or volume (as in a column in a building or in a scene which may divide up the elements portrayed into sectors). This may also be realised by other methods, such as the use of discontinuities of colour hue or saturation, of variations in visual shape, or simply by the use of empty space (op.cit:216). In magazines the degree of separateness of visuals from the verbal aspect of the text may be either

weak or strong, with clear framing being a suggestion of separateness or distinctness, and weak framing suggesting that both elements should be read together or as being close in some way (as in subject, or point of view). In *The Economist* magazine both clear framing and various degrees of weak framing are used. Instances of strong framing usually occur with graphs, tables and charts, where a distinct border has been drawn to clearly demarcate the two modes. Slightly lesser demarcation through framing occurs with many photographs, which are marked off from the surrounding text by lines drawn around and on the edges of the photograph/image frame. The use of *framing* in *The Economist* magazine is realised differently however in the case of sketch visuals where there is often no clearly drawn line to demarcate the verbal from the visual mode, but the use of white space to frame the visuals. This kind of choice of layout technique and visual representation implies strongly, in layout terms, the projection of an intersemiotic syntagm, which this study hypothesises as being a realisation of intersemiotic complementarity.

Vectors also can convey this sense of connectedness between elements in a composition. Besides being lines which can be drawn from or form a part of the represented elements in a visual, as realised by the direction of gaze, arms, and the structural features of objects, vectors may also be formed by the arrangement of abstract graphic elements, where the eye is guided away from the most to the next salient element (in terms of size or colour saturation etc.). Vectors can also be formed by differences in size or volume in co-occurring images, and the angles created by skewed elements, and headlines etc. In some graphic visuals, the structural similarity between the graphs can convey the sense that they belong together (the primary source of that sense may be the strong framing around them, but their structural similarity also acts as reinforcement). The similarities can include the fact that the graphs are all framed in the same way, they have a rectangular size and shape, they all have the 3-D ‘shadowing’ effect of being slightly raised from the paper on which they are placed (a common technique in *The Economist*), and they all have the same white-on-black contrasted headings.

4.2.3.4 The Importance of Reading Paths

An aspect which operates through all the three compositional structuring principles of Information value, Salience and Framing discussed by Kress and van Leeuwen (op.cit:218-223) is that of Reading paths, and the features of what they term as *linear* and *non-linear* compositions, a term which has already been introduced in Chapter Two in reference to Tadros' work (1985:25). The former refers to the strictly coded verbal text of English, which in its single-mode form must be read from left to right (e.g. a novel), and the latter to multimodal (composite) texts which can be approached in alternative non-linear (circular, diagonal, spiralling) ways. Reading paths relate to the hypothetical viewer's eye movement from the most salient points in the composition to the next or less salient points. There is of course a cultural element to reading paths in that viewers from different cultures (and even different age groups or educational backgrounds) may read a visual in differing ways. There is also a need to recognise that the reading path may not follow the same path as that followed in reading verbal text. In other words, left to right and top to bottom — it may in fact be the reverse or move from the centre outwards. Further, there is also no implication that the reading path encoded by the producers of the text is the same followed by the viewer. If what is made salient in a visual is culturally determined, then members of different cultural groupings are likely to have different views of what is or is not salient (Kress and van Leeuwen 1996:218-213).

Kress and van Leeuwen also comment about the reading paths commonly used in magazines and newspapers, comments that are relevant to the interpretation of *The Economist* magazine text in this study. They suggest that the reading paths followed in magazines often involve the readers flicking through and stopping as pictures or headlines catch their eye, and then perhaps returning to the articles which piqued their interest. Alternatively, they may go straight to the article relating to the front page topic or headline, or to their favourite columnist, or the sports section. Many readers of newspapers may in fact read the back page first. Thus the reading path is selective and partial, as opposed to being strictly linear. They comment further that

> "whether the reader only 'reads' the figure and the headline [referring to a magazine text they are discussing], or also part of the verbal text, a complementarity, a to-and-fro between the text and image, is guaranteed …… the most plausible reading path is the one in which readers begin by glancing at the photo, and then make a new start from left to right, from headline to photo, after which, optionally, they move to the body of the verbal text. Such pages can be scanned or read, just as pictures can be taken in at a glance or scrutinised in their every detail (op.cit:218-219).

As the report in Chapter Six on the interview with the Chief Editor of Graphic Design at *The Economist* magazine's corporate headquarters in London will show, this is precisely what the graphic designers of each issue of *The Economist* magazine assume that their readers will do, and so they attempt to construct their issues accordingly. Kress and van Leeuwen's use of the term 'complementarity' in the above quote is interesting, and it is in fact the first time that they use it. Kress and van Leeuwen's usage of the term is in a different sense to that of this study however, in that their usage refers particularly to the fact that a reader of a multimodal text generally tends to read all elements of a multimodal text in some culturally-determined way or direction. *Complementarity* in this study however, is a theoretically-motivated term which is used to explain not only why a reader does move "to-and-fro between the text and image", but also what *intersemiotic* semantic resources are used to produce this sense in the viewer that the text before him or her is a single, coherent multimodal text.

4.3 The Language of Displayed Art

The set of publications by O'Toole (1994, 1995) also applies an SFL perspective to the language of displayed art, and as such is also a significant contribution to a functional interpretation of visual communication. O'Toole's thesis is simply stated:

> Michael Halliday's Systemic-Functional linguistics offers a powerful and flexible model for the study of other semiotic codes besides natural language, and its universality may be of particular value in evolving discourses about art (1995:19).

Like Kress and van Leeuwen, O'Toole approaches the description and analysis of displayed art from a metafunctional standpoint. Similarly, he reinterprets the

metafunctions to be ‘Representational’ for ideational, ‘Modal’ for interpersonal, and ‘Compositional’ for textual, to provide interesting analyses of the ways that the visual modes of sculpture, architecture, and especially classical art project their meanings. Where O'Toole's theoretical focus significantly differs from Kress and van Leeuwen's however, is in his clearer stress on the key SFL notions of REALISATION and RANK SCALE in the interpretation of displayed art (Halliday 1994:15). Realisation in the SFL model refers to a relationship between levels of meaning. That is, socially-based meanings (such as those deriving from the ways that people construct the world of objects and happenings, as well as speaker/listener relationships) are recoded into the grammatical systems of MOOD, TRANSITIVITY, THEME etc. These grammatical resources are *realised by* various syntactic configurations, which are themselves *realised by* a range of appropriate phonological or graphemic sequences. Expressed another way, the phonological/graphemic systems *realise* the lexico-grammar, which in turn *realises* the semantic systems which themselves *realise* culture (Halliday 1992:24-25). The application of these fundamental principles to a typical Renaissance period painting for example, would suggest that the oft-depicted figures of Christ and his various disciples have the potential to realise certain Judaic-Christian eschatological concepts for their viewers, in accordance with their specific cultural backgrounds. These culturally-based meanings are realised however by the presentation of these figures by means of

> a particular manner of representation, with a particular modality of address to the viewer and involving a complex network of compositional relationships. These in turn are realised in particular lines and planes on the painted surface involving chromatically appropriate colours, rhythms, and degrees of illumination. The scale of realisation from semiotic systems to graphological form and substance in painting is analogous to that for language (O'Toole 1995:161).

O'Toole, like Kress and van Leeuwen in their 'grammar of images', asserts that there is a 'grammar' of painting, and that in any attempt to analyse these types of semiotic systems, there is a need "to isolate a hierarchy of comparable units of structure" (loc.cit.). In the SFL model of language the hierarchy of comparable units at the lexico-grammatical level which Halliday uses consists of the clause complex, clause, group, word and morpheme (1994). In O'Toole's interpretation,

the semiotics of painting or art is viewed and interpreted in terms of the levels of the Picture (the whole work), Episode (stages in the story or message portrayed), Figure (animate beings, human or non-human), and Member (parts of the figures) (1994:14-15, 1995:161). The full framework outlining these levels and the visual systems which can potentially be drawn upon in any work is outlined in Table 4.7. Although he also discusses sculpture and architecture as forms of displayed art, O'Toole focuses mainly on painting to develop his framework, and since paintings most closely approximate one of the kinds of visuals found in *The Economist* magazine (Naturalistic), this review will assess this framework in terms of its applicability to these kinds of visuals in the present study.

O'Toole claims that the framework he presents for the semiotic analysis of displayed art is not designed to be a formalised constraint on the interpretation of an artwork's meaning, but should be viewed as a 'map' which schematicises "the semiotic space created by the work within which our perceptions and conceptions are negotiated" (1995:165). He also proposes that there are some advantages to initially approaching an analysis from the Modal rather than the Representational functional dimension of meaning, despite the obvious pressure in both linguistic analysis and visual analysis to start with the subject matter of the text, or the topical nature of what is being visually represented. The advantages, according to O'Toole, are threefold: firstly, the Modal systems most probably affect the nature of the initial engagement with the work; secondly, an effective description would counteract the common tendency towards a form/content dichotomy among art critics; and thirdly, a modal-based semiotic analysis may provide students and lovers of art with a language to describe what is actually seen, rather than what art historians believe should be known as background knowledge (op.cit:166).

It can also be seen from the framework in Table 4.7 (following page) that many of the systems which O'Toole identifies as resources for potential usage in art-based semiotic systems are similar to those described in Kress and van Leeuwen's

UNIT \ FUNCTION	REPRESENTATIONAL	MODAL	COMPOSITIONAL
SCHOOL	Typical themes	Orientation to Reality and Style: e.g. Baroque - Expressionism - Constructivism - Surrealism - Cubism - Op Art Pop Art - Installation and Performance.	
PICTURE (WORK)	Actions, events Agents-patients-goals Narratives, Scenes, Settings, Features, Portrayals Sitters	Focus: Perspective Clarity, Light Colour, Scale Volume Gaze: 'Eyework' 'Paths' 'Rhythms' Intermediaries Frame, Weight Modality: Fantasy Irony Authenticity Symbolism Omission Intertextuality	Gestalt: Framing Horizontals Verticals Diagonals Proportion 'Theme' Line Rhythm Geometric forms Colour Cohesion
EPISODE	Group and sub-actions, Scenes, Portrayals Side sequences Interplay of actions	Scale to whole Centrality to whole Relative prominence Interplay of modalities	Relative position in Gestalt and to each other Alignment of forms Interplay of forms Coherence of forms
FIGURE	Character Act / Stance / Gesture Clothing components Object Position	Characterisation Relation to viewer Gaze, Gesture Contrast and Conflict: Scale, Line, Light, Colour	Relative position in Gestalt, in episode and to each other Parallelism / Opposition Subframing
MEMBER	Basic physical forms: Part of body, Objects Natural form, Components	Stylisation, Attenuation, Chiaroscuro, Synecdoche, Irony	Cohesion: Reference, Parallelism, Contrast, Rhythm

Table 4.7 Functions and systems in painting (O'Toole 1994, 1995)

‘grammar of images' (such as Gaze, Relative prominence, Framing, Rhythm, Colour, etc.). These kinds of visual systems are of course used by O'Toole in a distinct way to express how meanings are realised in a specific visual mode, and there are some additional systems included which obviously apply specifically to displayed art (such as Stylisation, Attenuation, Chiaroscurio etc.). To explicate the approach he is taking, O'Toole analyses some famous art works in depth — in the earlier of his two papers he examines Botticelli's **Primavera**, and in the latter Hinder's **Flight into Egypt**, the winner of the 1952 Blake Prize for Religious Art in Sydney, Australia.

O'Toole's extensive analysis of the **Primavera** is an effective illustration of the ways that the systemic visual options drawn upon and combined by an artist can be realised in a single painting. One of the strengths of his analytical model, which in some ways is lacking in Kress and van Leeuwen's attempt to describe a general 'grammar of images', is that he recognises the need to situate and relate his analysis to other generalised discourses about art and painting (op.cit:173). His appreciation of this need is an attempt to utilise the Hallidayan concept of Register, which is defined by specific values of Field (realised ideationally), Tenor (realised interpersonally) and Mode (realised textually), and constitutes the analytical tool which allows the semiotician to relate the social context (context of situation) to the text (Halliday and Hasan 1985; Halliday 1994). O'Toole also recognises that any given text (visual or verbal) is a realisation of the social semiotic out of which it has grown, as well as constituting a contribution to that social semiotic. A text therefore has the potential to consolidate that social semiotic by being highly governed by the prevailing conventions and social rules (be a reflection of it), or it may attempt to question, challenge, and destabilise the social semiotic from which it is derived (1995:175). O'Toole applies these concepts specifically to his analysis of the Hinder painting **Flight into Egypt**, which he discusses in terms of various art critics' responses to the awarding of the Blake Prize in Australia.

As already mentioned, many of the Representational, Modal and Compositional systems which O'Toole refers to in his schematic framework correlate with those

used in Kress and van Leeuwen's 'grammar of images' model (e.g. the categories in the representation of action, of objects and of scenes; the forms of address realised by gaze, framing, colour, illumination and perspective; the categories in composition such as framing, positioning in the visual space in terms of the horizontal, vertical and diagonal axes, and other factors such as colour coordination and the influence of size and framing on visual salience). What is distinct however is the application of the Hallidayan concept of Rank Scale for ascertaining the meanings of its various elements (although this is similar to their treatment of embedding in images), as well as a stronger application than Kress and van Leeuwen of the notion that any interpretation of a visual text needs to be carried out in relation to the social semiotic from which it has arisen, and therefore tempered with the understanding of why that text is as it is (the concept of Register). It is this attempt by O'Toole to relate the interpretation of a visual art work to aspects of its context of situation which is the most relevant aspect of his framework for this study, and which will therefore be utilised for the interpretation and analysis of the ways that *The Economist* magazine visuals project their meanings.

4.4 Summary and Conclusions

This chapter has attempted to outline and review a set of researchers who have used linguistically-derived insights from the general theory of language and communication developed by M.A.K. Halliday (1978, 1985) to examine non-linguistic modes. This review shows that there is a significant amount of work that has been carried out by those working from a Hallidayan interpretation of meaning-making in visual semiotic modes, and that it is concerned mainly with two areas: various types of images such as photographs, drawings and diagrams, and displayed art such as painting, sculpture and architecture.

What is new and interesting in Kress and van Leeuwen's and O'Toole's work is their application and adaptation of a different, linguistically-focussed paradigm to examine the ways that visual information is organised and projected. Both sets of work are characterised by a concentration on and adaptation of differing aspects of the SFL model. Kress and van Leeuwen's application of Hallidayan SFL

principles to the visual mode specifically involves adapting the TRANSITIVITY, MOOD, MODALITY, and THEME systems from the lexicogrammar to the ways that the range of images they examine organise their meanings, while O'Toole's is characterised by a focus on an application of these grammatical systems as well as *Rank Scale* and *Realisation* (which Kress and van Leeuwen only briefly discuss 1996:44). O'Toole's work also more overtly attempts to relate the visual texts he analyses in terms of their contexts of situation, an appreciation that *Register* is an important consideration when any text (of any mode) is analysed. Kress and van Leeuwen on the other hand examine a wide variety of images and image types to illustrate how the visual meanings they are referring to are produced, but they do this with minimal reference to the specific contexts in which the images they analyse originally occurred. When they do support their interpretations with reference to specific contexts of situation, it seems that their interpretations are more powerful (see for example 1996:144-145).

What is also of immediate note from this review is that the metafunctional terminology posited by Halliday to describe meanings at the semantic level in his SFL model has been changed or adapted by both sets of authors to suit their analyses and the modes they focus on. Kress and van Leeuwen begin by using Halliday's metafunctional terminology, and then proceed to adapt it to what they perceive as the appropriate terminology for visual sign-making (op.cit:40-41). Thus, under ideational they refer to *Representational* (*Narrative* and *Conceptual*) meanings, under interpersonal they refer to *Interactive* meanings, and under textual to *Composition(al)* meanings. O'Toole on the other hand reinterprets the metafunctions to be *Representational* for ideational, *Modal* for interpersonal, and *Compositional* for textual. The specific reasons why these changes have been made are not explicitly outlined in any great depth in either work, beyond O'Toole's suggestion that "Different labels [than the linguistic ones] are appropriate for other semiotic codes such as painting, sculpture and music, but the labels stand for similar functions, or types of meaning relation" (1994:5), and the statement by Kress and van Leeuwen: “In the form in which we gloss them [the metafunctions] here they are not specific to any one semiotic mode: for instance they are not specific to the linguistic” (1996:40).

The reasons that they do this may possibly be traced therefore to the fact that they wish to avoid a confusion of terminology. This is an important point, in that this study would also aim to avoid terminological confusion. However, since this study is attempting to analyse the ways that both the visual and verbal modes work together to realise intersemiotic complementarity, some consistency in terminology would be appropriate, especially since it is argued that both modes do in many ways realise the same or similar social meanings, but in ways that are mode-specific.

This review of Kress and van Leeuwen's visual grammar and O'Toole's schematic framework has also assessed them in terms of their applicability to the kinds of visuals commonly found in *The Economist* magazine. What was found was that Kress and van Leeuwen's 'grammar of images' is very useful in elucidating the kinds of visual meanings which typical visuals in *The Economist* magazine project, and how they organise them. O'Toole's model is not as useful in these terms since the level of delicacy of analysis did not reach that of Kress and van Leeuwen's. Where his schematic model is most useful is in providing a way of approaching the analysis of an image, whether it be a naturalistic photograph or a scientific/technological graph or table, in terms of a visual rank scale, and in terms of its relationship to its context of situation. The analyses by Kress and van Leeuwen and O'Toole are therefore useful to varying degrees for the insights they provide about the ways that various kinds of visuals organise and project their meanings. However, their work is mode-specific — they concentrate on the visual mode only and how each type projects its meanings, and do not attempt in any extensive way to clarify what happens intersemiotically when the verbal and the visual modes co-occur on the page.

Accordingly, as the focus of this study is to look at the intersemiotic relations between the visual and verbal aspects of a multimodal text drawn from *The Economist* magazine, Halliday's metafunctional interpretation of communication, along with selected ideas derived from the reinterpretation of these metafunctions by Kress and van Leeuwen and O'Toole will be utilised in the development of a

theoretical framework for determining the resources used for the realisation of intersemiotic complementarity. O'Toole's application of the SFL notion that a text and its context are dialectically related, will be specifically applied in the analysis of the *Economist* multimodal text — a presentation and analysis of the contextual variables relevant to this text should provide insights in terms of the context-text relationships operating, and will provide evidentiary support for the interpretations made in the analysis of intersemiotic complementarity.

For the intersemiotic examination of both visual and verbal modes in ideational terms, the terminology of the linguistic and visual TRANSITIVITY systems will be used, as will the terminology of MOOD (speech function) and Modality (propositional attitudes) for the intersemiotic examination of both visual and verbal modes in interpersonal terms. The intersemiotic examination of both visual and verbal modes in textual terms however, will require some adaptation. An attempt will be made to use Kress and van Leeuwen's application of Given/New to layout, but since this part of the intersemiotic analysis will be concerned with composition on the page, it will be necessary to adopt the terminology of layout and composition to explain how the two modes complement each other on the page space. How this will be done will be explained in more depth in the next chapter, where the framework will be presented. In Chapters Six and Seven following, this analytical framework will then be applied to the sample multimodal text drawn from *The Economist* magazine.