

Intersemiotic Complementarity: A Framework for Multimodal Discourse Analysis

Terry D. Royce
Teachers College, Columbia University

In the last century there has been a great deal of work in the analysis of linguistic communication, and in more recent years a body of work has also been built up describing the ways that visual modes project their meanings. However, there has been little work that specifically targets the nature of the intersemiotic semantic relationships *between* the visual and verbal modes, to explain just what features make multimodal text visually-verbally coherent. In this chapter a descriptive framework for the analysis of page-based multimodal texts is introduced and applied to a multimodal text extracted from the Finance department of *The Economist* magazine. The chapter examines the proposition that both the verbal and visual modes of communication, within the boundaries of a single text, *complement* each other in the ways that they project meaning, and that this *intersemiotic complementarity* (Royce, 1998a, 1998b) is realized through various linguistic and visual means peculiar to the respective modes. The sample text analyzed here is an extract from the issue of *The Economist* magazine published in March 1993, bearing the title heading *Mountains still to climb* (*The Economist*, March 27th, 1993, pp. 77–78). It is presented in full in Fig. 2.1, and will hereafter be referred to as the *Mountains* text.

The theoretical foundation of this analysis is derived from the Systemic Functional Linguistic (SFL) view of language as “social semiotic” (Halliday, 1978). Halliday (1978, pp. 16, 21, 27–29, & 109) makes four central claims about language. It is *functional* in terms of what it can do or what can be done with it, *semantic* in that it is used to make meanings, *contextual* in that

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Mountains still to climb

If April's business plan for Lloyd's does not satisfy both its capital providers and its clients, the market could die

ONE peak scaled often reveals another. So it is at Lloyd's, London's insurance market. Last year was awful: the market reported losses of over £2 billion (\$3.3 billion) for 1989, lawsuits alleging negligence mushroomed, and names (the individuals who provide Lloyd's capital) were outraged by a levy to boost central funds. But some said the worst was over. Losses for 1990 would be smaller; as the insurance cycle turned, later years would bring profits. And the new management team of David Rowland as chairman and Peter Middleton as chief executive would improve market efficiency and placate angry names.

Such optimism now seems premature. It has become clear that the market's loss for 1990, to be announced in June, will be bigger than that for 1989, probably close to £3 billion. Admittedly, a chunk of this—possibly £500m-1 billion—is a form of double-counting, for it represents stop-loss payments to names who made losses in 1989 and syndicates' "errors and omissions" (E&O) reserving against names' lawsuits. Both of these involve payments by one lot of names to another, not a net market loss. But the money still has to be found. And whereas 1989's losses were concentrated on the 5,000 names in excess-of-loss catastrophe syndicates, the 1990 losses will be more widely spread; few names will avoid them.

The cumulative effect of huge losses is undermining the market. As names resign or go bust, Lloyd's capacity has shrunk. The market now has just under 20,000 active names with an underwriting capacity of £8.75 billion, down by 40% in real terms from 1988. Names who struggled to pay 1989's losses last year will find it even harder to meet 1990's. And most are trapped in "open years"—syndicate years with losses that are too big and unpredictable to be closed by reinsuring into a successor year. Already 84% of names have at least one open year; by June that figure will be close to 100%. Members with open years can stop underwriting, but they cannot leave Lloyd's.

It is an inauspicious background for Lloyd's first-ever business plan, which will be unveiled by Messrs Rowland and Mid-

dleton in late April. The plan, which will set Lloyd's future course, is now being discussed by its market board. According to Mr Middleton, its proposals could be more radical than the reforms suggested in last year's taskforce report—partly because the huge losses revealed since then have softened resistance to change. Cost-cutting, for instance, is being stepped up. Lloyd's is sacking central staff; agencies are following suit.

Mr Middleton thinks he can push through reforms, even though the members' agencies that look after names and the managing agencies that run syndicates are fiercely independent. The centre may exert some control because the agencies all trade under its brand-name. He wants to raise professional standards, and to make economies through amalgamation and centralisation of some functions, including those now spread among 80 members' agencies. He is also keen on corporate members, both to help the market grow and to spur higher underwriting standards.

Most of this will be welcomed by names. But it leaves three other big problems: open years, litigation and financing the 1990 losses. The main reason that these are so tricky is that they all involve huge sums of money.

Mr Rowland

likes to say that he has no magic lamp to rub which can produce money from thin air.

The business plan will certainly discuss open years; it has to, for finding an exit route has become most names' top priority. The plan may suggest a bigger job for Centrewrite, the Lloyd's-owned insurance company set up in 1991 to offer quotes to syndicates unable to close their accounts. But Centrewrite will need a lot more capital from the market if it is to cope with the hangover of past claims, especially those arising from American asbestosis and pollution for which insurers are contesting liability in court. And names who are relatively free of these burdens will protest against any tacit mutualisation of losses.

Those with an eye to the future say that Lloyd's must insulate newcomers from the cost of the past—otherwise nobody, individual or incorporated, will join. Some have suggested leaving all 1990 accounts open, for instance, thus ensuring that no claim from that year or earlier ones falls on future names. By showing that capital providers can find the exit blocked, however, such a move could deter new names from signing up. Mr Middleton sees a case for concentrating old-year claims and reserves in a single body, to present a united front to claimants. But that may not do much to close years that are open because insurers are fighting policy-holders or their successors through American courts (although some recent decisions have been helpful to Lloyd's).

The business plan will have less to say about the lawsuits lodged by Lloyd's own names. Members'

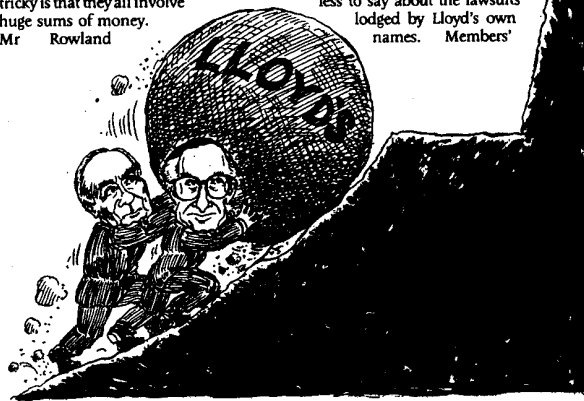
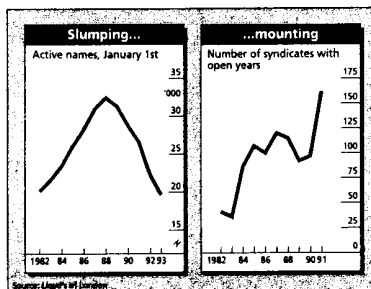


FIG. 2.1. (Continued)

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and managing agencies have been deluged by writs from angry names convinced that they are the victims of negligence rather than bad luck. Mr Middleton points out that, if prospective litigants could settle with the E&O insurers who would have to pay whenever claimants won, it would minimise the sums siphoned off by lawyers. But the insurers are not keen to settle on the names' terms. Not all the claims are equally strong; many E&O insurers have reinsurance outside Lloyd's that they can claim on only if they lose in court; and the E&O pot of about £1 billion is anyway too small to cover all litigants.

Letting the litigation run is dangerous, however. It means at least three years of bad publicity for Lloyd's, which might put off not only new names but also new policyholders. It could drive many agencies into bankruptcy. Some names reckon that, despite its immunity from most lawsuits under the 1982 act, Lloyd's itself could be held liable if it were shown to have acted in bad faith. If they are right, that could close down the whole market. Hence, the angry names



argue, the case for a generous settlement now, drawing not only on the reserves set aside by E&O insurers but also on borrowing through a bond issue by Lloyd's.

A bond issue is also talked of as a possible solution for the third problem, financing 1990's losses—which the business plan may not even discuss. Rising insurance rates should make the early 1990s profitable. But names cannot touch those profits for another three years, under Lloyd's system of

back-dated accounting; meanwhile, they must meet losses for 1990 (and perhaps 1991).

Mr Middleton would like to help those who want to continue underwriting. But any borrowing to pay for past losses could run foul of the trade department's solvency rules (though some see the Treasury's modest budget measures to help names build reserves as a sign of government sympathy). Mortgaging future profits would make the market less attractive to new capital. And profits may not, in the event, materialise; few people expected the New York bomb or America's recent storms.

Names, policy-holders and prospective investors are pinning a lot of hope on the Rowland/Middleton business plan for Lloyd's. The two men win plaudits for their willingness to listen to both suggestions and grievances. But good intentions are not enough. If the plan cannot solve the open-year problem, help head off litigation and find a way of meeting 1990's losses, Lloyd's may not survive. The stakes are that high.

FIG. 2.1. The Mountains text. © The Economist Newspaper Limited. London (March 27, 1993). © David Simonds (March 27, 1993).

meanings exchanged are influenced by their social and cultural situations, and *semiotic* in that it is a process of making meanings by selecting “from the total set of options that constitute what can be meant” (Halliday, 1978, 1985, p. 53). Halliday also identifies “three kinds of meaning that are embodied in human language as a whole, forming the basis of the semantic organization of all natural languages” (Halliday, 1985). These are *metafunctions*, components which operate simultaneously in the semantics of every language, and are defined as:

the *Ideational* metafunction, which is the resource for “the representation of experience: our experience of the world that lies about us, and also inside us, the world of our imagination. It is meaning in the sense of ‘content.’”

the *Interpersonal* metafunction, which is the resource for “meaning as a form of action: the speaker or writer doing something to the listener or reader by means of language.”

the *Textual* metafunction, which is the resource for maintaining “relevance to the context: both the preceding (and following) text, and context of situation.” (Halliday, 1985, p. 53)

The notion of what constitutes a text in SFL is that it is primarily social and semantic, not simply defined by size or any other physical parameters.

A text is also a metafunctional construct in that it is a complex of ideational, interpersonal, and textual meanings (p. 48). To paraphrase Halliday (1985, p. 45) and to apply these principles to *The Economist*, a reader of any article in the magazine interacts with it in terms of all three of these metafunctions. In other words, the reader would first understand the article's processes, their participants, and the circumstances being referred to, as well the relationships between one process and another, or one participant and another which share the same position in the text. Second, the reader would recognize the speech functions being used, whether the article is making an offer, providing statements, asking questions or commanding, as well as the attitudes and judgments embodied, and third, the reader would appreciate the news value and topicality of the message reported, or its relevance to the context in which it occurs, as well as the coherence between the different parts of the article.

Text in this analysis will therefore be viewed in social and metafunctional terms, incorporating the possibility that it can be either single or multimodal. Indeed, Halliday also asserts that there are "other ways of meaning, other than through language . . . there are many other modes of meaning, in any culture, which are outside the realm of language" (p. 4). These other modes of meaning are "all bearers of meaning in the culture. Indeed we can define a culture as a set of semiotic systems, as a set of systems of meaning, all of which interrelate" (p. 4). The assumption that semiotic systems interrelate seems to be an established one. The question therefore arises: If it is assumed that different semiotic systems can and do work together semantically, what evidence is there for it, and how can it be explained? Or put in another way, what is the function of the visual vis-à-vis the verbal mode, and vice versa? The analysis in this chapter therefore seeks to test the claim of the interrelatedness of systems of meaning, in this case, the semantic interface between the visual and the verbal semiotic systems in a multimodal text extracted from one instance of economically oriented journalistic print media, *The Economist* magazine.

AN INTERSEMIOTIC COMPLEMENTARITY FRAMEWORK

Reading (or viewing) a visual involves the simultaneous interplay of three elements which correlate with Halliday's (1985) three metafunctions: the ideational, the interpersonal, and the textual. These are the *represented participants*, the *interactive participants*, and the visual's *coherent structural elements*. The *represented participants* are 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. The *interactive participants* are the participants who are interacting with each other in the act of reading a visual, one being the graphic designer or drawer, and the other the reader or viewer. This category represents the social relations between the viewer and the visual. As well as these two kinds of participants being active simultaneously in the viewing process, there are also visual *compositional* features, or the ways elements in a visual or a text are arranged to give a sense of structural coherence. These are elements of layout which combine and integrate the interactive and represented participants, which work in unison to represent a particular culturally and ideologically dependent structuring of the world view which the graphic designers or drawers wish to present at that point in time and context (Kress & van Leeuwen, 1990, pp. 16–18). The term *compositional* has been used instead of Halliday's term *textual*, because it seems to capture more fully the sense of two modes within one page interacting with each other to provide coherent intersemiotic message. Composition deals not only specifically with layout on a page surface, but also with the text's positioning within a whole magazine or book, as well as in a particular section or department.

The interpretation of visual-verbal metafunctional interface in the *Mountains* text involves an analysis of the text's features in terms of the ideational, interpersonal, and compositional features evident. In the linguistic system in SFL, the Ideational metafunction is realized by the clause as representation, and largely through selections in the system of TRANSITIVITY. This system deals with types of *process*, and according to Halliday (1985), the "concepts of process, participant and circumstance are semantic categories which explain in the most general way how phenomena of the real world are represented in linguistic structures" (p. 102). It is argued in this chapter that these semantic categories are similarly useful for explaining how the constructors of a visual have represented the ideational meanings they wish to convey. Like linguistic structures, visual structures and the visual processes embodied within them are built into the semantics of the various visual communication modes, and they are systematically associated with different kinds of participant roles. Visuals, *inter alia*, are representations of reality, or representations of experience and information, and in that sense they realize the ideational metafunction, where patterns of experience are represented. This metafunction, in other words, deals with the methods used by human beings to "build a mental picture of reality, to make sense of their experience of what goes on around them and inside them" (Halliday, 1985, p. 101).

As the framework presented in Table 2.1 shows, the examination of the ways that the visual and verbal modes interact intersemiotically in ideational terms involves the *identification* of represented *participants* (who or what is in the visual frame, either animate or inanimate), the represented

TABLE 2.1
Page-Based Intersemiotic Complementarity

| Metafunction | Visual Meanings | Intersemiotic Complementarity | Verbal Meanings |
|--------------|---|---|--|
| Ideational | <p>Variations occur according to the coding orientation. In the Naturalistic coding we can look at:</p> <p>Identification: who or what</p> <p>Activity: what action</p> <p>Circumstances: where, who with, by what means</p> <p>Attributes: the qualities and characteristics</p> <p>In the Mathematical coding we can look at:</p> <p>Identification: what</p> <p>Relational Activity: what is the relation</p> <p>Circumstances: where, what with, by what means</p> <p>Attributes: qualities and characteristics</p> | <p>Various lexico-semantic ways of relating the experiential and logical content or subject matter represented or projected in both visual and verbal modes through the intersemiotic sense relations of:</p> <p>Repetition: identical experiential meaning.</p> <p>Synonymy: the same or similar experiential meaning.</p> <p>Antonymy: opposite experiential meaning.</p> <p>Meronymy: the relation between the part and whole of something.</p> <p>Hyponymy: the relation between a general class of something and its subclasses.</p> <p>Collocation: an expectancy or high probability to co-occur in a field or subject area.</p> | <p>Lexical elements which relate to the visual meanings. These lexical items arise according to:</p> <p>Identification (participants): who or what is involved in any activity?</p> <p>Activity (processes): what action is taking place, events, states, types of behavior?</p> <p>Circumstances: where, who with, and by what means are the activities being carried out?</p> <p>Attributes: what are the qualities and characteristics of the participants?</p> |

| | | | |
|---------------|---|--|---|
| Interpersonal | <p>Variations occur according to the Coding Orientation. In the Naturalistic Coding—it is a continua of the use of:</p> <ul style="list-style-type: none"> Address Involvement & Power Social Distance Modality Markers <p>In the Mathematical Coding—it is a continua of the use of:</p> <ul style="list-style-type: none"> Involvement & Power Modality Markers | <p>Various ways of intersemiotically relating the reader/viewer and the text through MOOD (Address via offers, commands, statements, questions) and MODALITY (Attitude re something as real or unreal, true or false, possible or impossible, necessary or unnecessary, and other attitudinal positions) through the intersemiotic relations of:</p> <ul style="list-style-type: none"> Reinforcement of address: an identical form of address. Attitudinal congruence: a similar kind of attitude. Attitudinal dissonance: an opposite or ironic attitude. | <p>Elements of the clause as exchange which relate to visual meanings. These arise according to:</p> <p>The MOOD element in the clause realizing speech function</p> <p>The MODALITY features of the clause which express attitudes.</p> <p>Modalization views on the possibility, probability, and certainty of the Proposition, as well as the use Comment Adjuncts. Also the use of attitudinal Epithets in the form of subjective adjectives.</p> |
| Compositional | <p>Variations in visual meanings occur according to choices made in terms of:</p> <ul style="list-style-type: none"> Information Value Saliency Framing (weak and strong). | <p>Various ways of mapping the modes to realize a coherent layout or composition by</p> <ul style="list-style-type: none"> Information Valuation on the page Saliency on the page Degree of framing of elements on the page Inter-Visual synonymy Reading Path | <p>The body copy as an orthographic whole realized by various structuring principles:</p> <ul style="list-style-type: none"> Information Value Saliency Framing (weak and strong). |

processes or the *activity* (what action is taking place, who or what is the actor or is acting, and who or what is the recipient or object of that action), the *circumstances*, or what those actions represent according to the wider context of situation (these may be locative or concerned with the setting, of accompaniment in terms of participants not involved with the action, and of means in terms of participants used by the actors), and the *attributes*, or the qualities and characteristics of the participants. Each of these aspects, the participants, processes, circumstances, and attributes, can be conflated into the *Visual Message Elements* (hereafter VMEs). These elements are visual features which carry semantic properties, and these semantic properties or meanings are potentially realized by a variety of visual techniques at the disposal of the visual designers.

Once the VMEs have been derived, an analysis for evidence of similar or differentiated meanings in the verbal aspect of the text can be carried out. Starting with the VMEs and checking through the verbal aspect of the text for semantically related lexical items produces a series of lexical inventories. The interpretation of these inventories in terms of their semantic relationship to the visual message elements can be based on the linguistic concepts currently used to describe and analyze the cohesive attributes of any given spoken or written text. In the same ways that the concept of metafunctions can be applied to the analysis of visual modes of communication, so too can the approach to the analysis of cohesion in text by Halliday and Hasan (1985) be used to explicate the ideational cohesive relations between the modes in a multimodal text. For this purpose, the following sense relations will be used: *Repetition* (R) for the repetition of experiential meaning; *Synonymy* (S) for a similar experiential meaning; *Antonymy* (A) for an opposite experiential meaning; *Hyponymy* (H) for the classification of a general class of something and its subclasses; and *Meronymy* (M) for reference to the whole of something and its constituent parts (Halliday & Hasan, 1985). The general category of *collocation* (C) for words that tend to co-occur in various subject areas will also be used (Halliday, 1985).

The examination of the intersemiotic *interpersonal* features of a multimodal text involves a look at the ways that relations between the visual and the viewer/reader are represented (Kress & van Leeuwen, 1996). The ways in which the producer and viewer/reader of a text are placed socially in relation to each other is important because this can affect the topic, the ways that it is received, and the ways that it is interpreted. In this socially constrained context, one way that the interpersonal complementarity between the visual and verbal components in a multimodal text can be examined is through an analysis of intersemiotic MOOD, or the ways that both the modes *address* the viewers/readers. In the linguistic system in SFL, the Interpersonal metafunction is realized by the clause as exchange, where it is an interactive event in which the speaker, or writer and audience are in-

volved (Halliday, 1985, p. 68). Halliday refers to four primary speech functions of offer, command, statement, and question, which can be matched by a set of appropriate responses: accepting the offer, carrying out the command, acknowledging a statement, and answering a question (pp. 68–69). He distinguishes also between the exchanging of goods and services, and the exchanging of information. When information is exchanged in an interaction between a speaker/listener and a writer/reader, it is the grammatical MOOD element in the clause which is the component that is passed back and forth in the exchange. There are two essential components of the MOOD component of the clause, the Subject and the Finite, and it is the order in which they appear in the clause that determines whether a statement is being made, a question is being asked, an offer is being made, or a command is being given. In the text focused on in this chapter, information rather than goods and services are exchanged, so the focus will be on the ways that its propositions are addressed to readers in the exchange of information.

An examination of the verbal component of a multimodal text considers how information is exchanged in the ways the writers address their readers. They could be making statements, asking questions or making offers, or requiring them to carry out some action, and this may relate intersemiotically in some way to the ways that the visuals address their viewers. In considering MOOD in the visual component however, it seems that visuals utilize different methods which do not easily fit with the verbal categories. The visuals often need verbal support to make the nature of the speech function clear, as in a visual offer of goods and services supported by a verbal contact address in an advertisement, or the verbal reinforcement provided by a printed question to complement a questioning facial expression (Kress & van Leeuwen, 1990, p. 30).

In determining the speech function of a particular visual, the most important feature to look for is the presence or absence of visual techniques that directly address the viewer. In the case of a visual which approximates or reproduces a naturalistic scene, the absence of any gaze or facial expressions toward the viewer indicating a question is being asked (realized by vector drawn from some point of origin to the viewer's face), or gestures which command (realized by, for example, a pointed finger forming a vector directly to the viewer), or offers of goods to the viewer (realized perhaps by a vector formed from a hand gesture toward some object in the visual frame), would strongly suggest that it is offering information to the viewers. In that case there would be no vectors which can be drawn from the represented participants directly toward the viewers; all the vectors, for example, may indicate participants within the visual frame, and require the viewer to be cognizant of the ways that they are interacting with each other. It would therefore be a portrayal or a scene that the viewer can look at with really no

requirement to react other than to agree with it, or to either acknowledge or contradict its existence/veracity as a scene. This offer of information can be reinforced by some kind of verbal support, such as labeling to identify the scene or major represented participants.

In the case of a visual which presents information in a mathematical form (as in a graph or chart), the techniques for addressing a viewer of a naturalistic image cannot really be utilized. This perhaps goes to the heart of the nature of a visual of this type in that its primary function is to address the viewer via techniques which present information in quantitative forms. Thus there really is no question that these kinds of mathematical visuals are offering information, since the represented participants (in other words, the data) can form no other relationship to the viewer(s) than to be simply a display of numbers and graphic lines interacting with each other to indicate some interrelated information or data. The viewer is not asked anything, is not commanded, and is not asked to accept or reject something on offer. The viewer is however offered information that can be agreed or disagreed with, or acknowledged or contradicted.

The level of *involvement* by a viewer with a visual is realized by a horizontal angle, which is concerned with the interrelationship between two frontal planes: the frontal plane of the constructor of the visual and the frontal plane of the represented participants (Kress & van Leeuwen, 1990). These planes may be aligned parallel to each other, or may diverge by forming an angle of varying degrees with each other. A visual can therefore have a frontal or oblique point of view, the oblique point of view being a continuum of obliqueness according to the angle of the divergence. The frontal angle is a statement of inclusion between the constructor and the visual, while an oblique angle encodes degrees of commitment to the subject or represented participants, stating to varying degrees of intensity the level of inclusion. The right-angled or perpendicular oblique angle would be suggestive of viewing a scene with no involvement at all beyond stating that 'this is a scene.'

The *power relations* between the viewers and the represented participants in a visual are encoded in the vertical angle formed between them. This is commonly used in cinematography where the viewers of film are positioned to react to the participants in a particular shot according to whether they are looking down to, up to, or at eye-level with them. This produces three power positions: a high angle, a low angle, and an eye-level angle. The high angle forces the viewers to look down on the represented participants, which is suggestive of a superiority to them, or of their insignificance. A low angle forces the viewer to look up to them, which is suggestive of the viewer's inferior position, or of the importance of the portrayed participant(s). An eye-level angle is suggestive of a sense of equality between the viewer and the represented participants (Kress & van Leeuwen, 1990).

The *degrees of social distance* encoded between the represented participants and the viewer(s) is realized by the size of frame used. The size of frame affects how much of the human body is shown in the visual frame, giving different shots such as the close-up, the medium shot, and the long shot. These different kinds of shots have a parallel with the varying distances between people when they talk to each other face to face, where it can be intimate or friendly, or unknown (Kress & van Leeuwen, 1990).

An examination of *compositional* features of a multimodal text involves an examination of those features of its layout which allow the elements on the page(s) to cohere as part of the one multimodal text. Such elements are not placed on the page randomly, but are placed there for various purposes, the most important of which is to convey to readers a sense of unity, of cooperation, and of consistency in terms of the total message. It is to convey, therefore, a sense of intersemiotic *complementarity*. This intersemiosis in compositional terms can be explicated by making observations about such features as the visual-to-verbal interface within the text (the visuals in relation to the verbal aspect), the visual-to-visual interface (the visuals in relation to each other), and where necessary the intravisual interface (the represented participants in relation to each other within the visuals). A discussion of each of these intersemiotic relations involves utilizing some of the major principles of composition. These are visual salience, the use of balance or balancing centers, vectors, visual framing, and reading paths.

THE ANALYSIS OF IDEATIONAL INTERSEMIOTIC COMPLEMENTARITY

The first step in examining the ideational intersemiotic features of the *Mountains* text involves deriving the *Visual Message Elements* (VME or VMEs). There are several *represented participant* VMEs in the sketch caricature. They are glossed as: *Lloyd's*, which is verbally indicated on the boulder; *Rowland & Middleton* as the two business-suited, middle-aged financiers identified and differentiated by their caricatured facial features; the *Boulder* as a visual metaphor for Lloyd's current problems; and the *Upper ledge/slope*, which acts as the objective for the activity of the two men with the boulder, success at which constitutes a solution to Lloyd's problems. The *process* VME is *Climbing—pushing up*, a visual metaphor for the actions being taken by the two men to deal with Lloyd's problems. The *circumstantial* VME is the *Mountain*, the profile of which presents a visual metaphor for Lloyd's past path (the lower slope), its present position (the boulder's position), and its future path (the upper slope).

The PARTICIPANT VMEs for the line graphs are glossed as the verbally indicated subheading *Active names*, which identifies the quantitative focus of

the left-side line graph and gives it its “topic focus,” the verbally indicated subheading *Syndicates with open years*, which identifies the quantitative focus of the right-side line graph and also gives it its “topic focus,” *0–35,000 (number)*, which is realized by two vertical ‘y’ axes with points marked evenly for first the number of names (thousands), and second the number (also verbally indicated) of syndicates with open years (in lots of 25), and finally *1982–1993 (time)*, which is realized by two horizontal ‘x’ axes, both beginning with 1982 and increasing by 2-year lots, and both finishing in 1993. *Time* is also verbally indicated by *January 1st* in the subheading.

The *process* VMEs are *Slumping–mounting*, as realized by twin verbally indicated visual headings referring to vertical movements, one suggesting that the left line graph is going down, and the other going up, thus giving a “point of view” to each visual, as well as the action of the graphs as glossed by *Graphic focus: increasing loss*. This is realized by the two line graphs displaying graphic action, variations, and the rates of change in the dependent variables (active names and open year syndicates). The *circumstantial* VME is *Source: Lloyd’s of London*, which is a verbally indicated visual footer that identifies the data source, in this case from Lloyd’s of London itself.

Using the derived VMEs as the starting point and then analyzing the verbal aspect of the *Mountains* text for semantically related lexical items produces a series of lexical inventories. These are presented in Tables 2.2 (i) and 2.2 (ii), and 2.3 (i) and 2.3 (ii).

Now, taking a look at the inventories for both the sketch caricature and the line graphs, we can see that there is ample evidence for intersemiotic complementarity between the two modes. The *Lloyd’s* and *Source: Lloyd’s of London* inventories in both the sketch caricature and the line graphs tables are particularly revealing. The subject matter of this text is clearly Lloyd’s, and accordingly, the topic and institution-identifying lexical item *Lloyd’s* is repeated consistently, as are its synonyms such as *market*, *the market*, and *London’s insurance market* (Lloyd’s is a place where insurance policies are traded, so it is indeed a market). The text-topic is therefore carried and reinforced across the modes by the use of intersemiotic repetition of *Lloyd’s* and the use of its various synonyms in both the sketch caricature and line graphs inventories.

The other intersemiotic sense relations utilized in these inventories support the development of this subject matter, and reinforce the fact that this text is about a particular financial institution. For example, Lloyd’s is a highly structured organization which consists of various people (its *market board*, *policyholders*), insurance companies (*insurers*, *E&O insurers*, *Centre-write*), and investor organizations (*corporate members*, *managing agencies*, *member’s agencies*) etc. There is thus a high frequency of intersemiotic meronymy, which is concerned with part–whole relations (which in this case are the functioning parts of Lloyd’s of London). Intersemiotic collocation is

TABLE 2.2 (i)
Lexicosemantic Intersemiotic Complementarity—Sketch Caricature

| S's | Participants | | Boulder (problems) | Processes | Goals | Circumstances |
|-----|----------------------------------|---|--|------------|-------------------------------|---------------------------------------|
| | Lloyd's | Rowland & Middleton | | | | |
| 1 | FINANCE (C) | | | | | |
| 2 | Lloyd's (R) | | | climb (R) | | Mountains (R) |
| 3 | the market (S) | | | | Upper slope (the solution) | Mountain (Lloyd's path—time/place) |
| 4 | Lloyd's (R) | | | scaled (S) | business plan (S) | peak (M) |
| 5 | London's insurance market (S) | | | | | |
| 6 | the market (S) | | losses (H) negligence (H) lawsuits (H) | boost (S) | | last year (M) |
| 7 | Lloyd's (R) | | losses (H) | | | over (M) |
| 8 | insurance cycle (C) | management team (C) | | | | |
| 9 | market (S) | David Rowland (R) chairman (C) Peter Middleton (R) chief executive (C) | | | | |
| 10 | | | | | | |
| 11 | market's (S) | | loss (H) | | | now (M) |

(Continued)

TABLE 2.2 (i)
(Continued)

| S's | Participants | | Boulder (problems) | Processes Climbing—pushing up (enacting solutions) | Goals Upper slope (the solution) | Circumstances Mountain (Lloyd's path—time/place) |
|-----|---------------------------------|------------------------|---|--|--|--|
| | Lloyd's | Rowland & Middleton | | | | |
| 12 | errors and omissions (C) | | chunk (M) losses (H) lawsuits (H) loss (H) | | | |
| 13 | (E&O) (C) | | | | | |
| 14 | market (S) | | | | | |
| 15 | | | losses (H) losses (H) losses (H) | | | |
| 16 | market (S) | | | | | |
| 17 | Lloyd's (R) | | | | | |
| 18 | market (S) | | | | | |
| 19 | underwriting (C) | | | struggled (S) | | now (M) under (M) down (M) |
| 20 | reinsuring (C) | | losses (H) | | | |
| 21 | | | | | | |
| 22 | Lloyd's (R) underwriting (C) | | | | | |
| 23 | Lloyd's (R) | Rowland (R) | | | business plan (S) | background (M) |

| | | | | | | |
|----|--|------------------|------------------------------|--|--|-----------------------|
| 24 | Lloyd's (R) market board (M) | Middleton (R) | losses (H) | | plan (S) | future (M) now (M) |
| 25 | | | | stepped up (S) | reforms (H) cost-cutting (H) | |
| 26 | | | | | sacking . . . staff (H) | |
| 27 | Lloyd's (R) agencies (M) member's agencies (M) | | | | | |
| 28 | managing agencies (M) | Mr Middleton (R) | | push (R) | reforms (H) | |
| 29 | agencies (M) | | | control (S) exert (S) raise . . . standards (S) | | now (M) |
| 30 | member's agencies (M) | | | | make economies (H) amalgamation (H) centralisation (H) | |
| 31 | corporate members (M) market (S) underwriting (C) | | | spur (C) | higher underwriting standards (H) | |
| 32 | | | open years (H) | | | |
| 33 | | | litigation (H) losses (H) | | | |

TABLE 2.2 (ii)
Lexicosemantic Intersemiotic Complimentarity—Sketch Caricature

| S's | Participants | | Processes | | Goals | | Circumstances | |
|-----|---|---------------------|-----------------------------|--|---|------------------------------------|---------------|--|
| | Lloyd's | Rowland & Middleton | Boulder (problems) | Climbing—pushing up (enacting solutions) | Upper slope (the solution) | Mountain (Lloyd's path—time/place) | | |
| 34 | | Rowland (R) | open years (H) | | business plan (S) | thin air (C) | | |
| 35 | | | | | plan (S) | | | |
| 36 | | | | | | | | |
| 37 | Centrewrite (M) Lloyd's (R) | | claims (H) | cope (C) contesting (C) | | past (M) | | |
| 38 | Centrewrite (M) market (S) insurers (M) | | losses (H) | | | | | |
| 39 | | | | | insulate newcomers (H) | future (M) | | |
| 40 | Lloyd's (R) | | | ensuring (C) falls (C) | | past (M) | | |
| 41 | | | | | | future (M) | | |
| 42 | | | | fighting (C) | present a united front (H) | | | |
| 43 | | Mr Middleton (R) | | | | | | |
| 44 | insurers (M) policy-holders (M) | | | | | | | |
| 45 | Lloyd's (R) | | lawsuits (H) | | business plan (S) | | | |
| 46 | Lloyd's (R) managing agencies (M) | | writs (H) negligence (H) | | | | | |
| 47 | E&O insurers (M) | Mr Middleton (R) | | | minimise the sums si- phoned off (H) | | | |

| | | | | |
|----|---|---|---|---------------------|
| 48 | insurers (M) | | | |
| 49 | E&O insurers (M) reinsurance (C) Lloyd's (R) E&O (C) | litigation (H) bad publicity (H) | | |
| 50 | | | | |
| 51 | Lloyd's (R) policyholders (M) | bankruptcy (H) lawsuits (H) | | down (M) now (M) |
| 52 | agencies (M) | | | |
| 53 | Lloyd's (R) | | | |
| 54 | market (S) | | | |
| 55 | E&O insurers (M) Lloyd's (R) | | settlement (S) | |
| 56 | | problem (R) losses (H) | solution (R) business plan (S) rising (S) | |
| 57 | insurance rates (C) | | | |
| 58 | Lloyd's (R) | losses (H) | | |
| 59 | underwriting (C) | losses (H) | help (C) | past (M) |
| 60 | | losses (H) | budget measures (H) help (C) | future (M) |
| 61 | market (S) new capital (C) | Mr Middleton (R) | | |
| 62 | | | | |
| 63 | policyholders (M) | Rowland (R) /Middleton (R) | business plan (S) | |
| 64 | Lloyd's (R) | The two men (S) | | |
| 65 | | | | |
| 66 | Lloyd's (R) | problem (R) litigation (H) losses (H) | plan (S) | |
| 67 | | | high (C) | |

TABLE 2.3 (i)
Lexicosemantic Intersemiotic Complementarity—Line Graphs

| S's | Participants | | | Processes | | Circumstances |
|-----|--|----------------------------|---|--|----------------------------|--|
| | Active Names | Syndicates with open years | 0–35,000 (number) | 1982–1993 (time) | Slumping . . . mounting | |
| 1 | | | | | | FINANCE (C) |
| 2 | | | | | Mountains (R) climb (S) | |
| 3 | capital providers (S) | | | | | Lloyd's (R) the market (S) |
| 4 | | | | | peak (C) scaled (S) | |
| 5 | | | | | | Lloyd's (R) Londoon's insurance market (S) |
| 6 | names (R) individuals who provide Lloyd's capital (S) | | 2 billion (C) 3.3 billion (C) | Last year (S) 1989 (M) | boost (C) | the market (S) Lloyd's (R) |
| 7 | | | | | over (C) | |
| 8 | | | | 1990 (M) later years (C) | | insurance cycle (C) market (S) |
| 9 | names (R) | | | now (S) premature (C) 1990 (M) June (M) 1989 (M) 1989 (M) | | |
| 10 | | | | | | loss (R) market's (S) |
| 11 | | | 3 billion (C) | | | |
| 12 | names (R) names (R) names (R) | syndicates' (R) | 500m–1 billion (C) double-counting (C) | | | losses (R) error and omissions (C) (E&O) (C) market (S) |
| 13 | | | | | | |
| 14 | | | | | | |

| | | | | | | |
|----|------------------------|--|---|--|--------------------------|---|
| 15 | names (R) names (R) | syndicates (R) | 5000 (M) more (C) few (C) cumulative (C) | 1989's (M) 1990 (M) | losses (R) losses (R) | |
| 16 | names (R) | | | | losses (R) | market (S) Lloyd's (R) market (S) underwriting (C) |
| 17 | active names (R) | | 20,000 (M) 8.7 billion (C) 40% (C) | now (S) 1988 (M) | down (S) | |
| 18 | Names (R) | | | 1989's (M) last year (S) 1990's (M) | losses (R) | |
| 19 | | open years (R) syndicate years (R) successor year (R) open year (R) | | | losses (R) | reinsuring (C) |
| 20 | names (R) | | 84% (C) one (S) figure (C) 100% (C) | June (M) | | |
| 21 | members (S) | open years (R) | | | | Lloyd's (R) underwriting (C) Lloyd's (R) Lloyd's (R) market board (M) |
| 22 | | | more (C) | late April (M) future (C) now (S) last year's (S) since then (C) | losses (R) | |
| 23 | | | | | stepped up (S) | |
| 24 | | | | | | Lloyd's (R) agencies (M) member's agencies (M) managing agencies (M) agencies (M) |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | names (R) | syndicates (R) | | | | |
| 29 | | | | | | |

TABLE 2.3 (ii)
Lexicosemantic Intersemiotic Complementarity—Line Graphs

| S's | Participants | | | Processes | | | Circumstances |
|-----|-----------------------|----------------------------|-------------------|------------------|-------------------------|--------------------|-----------------------|
| | Active Names | Syndicates with open years | 0-35,000 (number) | 1982-1993 (time) | Slumping . . . mounting | Graphic focus—loss | |
| 30 | | | 80 (M) | now (S) | raise (S) | | member's agencies (M) |
| 31 | | | | | higher (C) | | corporate members (M) |
| 32 | names (R) | | | | | | market (S) |
| 33 | | open years (R) | three (S) | 1990 (M) | | losses (R) | underwriting (C) |
| 34 | | | sums (C) | | | | |
| 35 | | | | | | | |
| 36 | names' (R) | open years (R) | | | | | |
| 37 | | syndicates (R) | | 1991 (M) | | | Centrewrite (M) |
| 38 | | | a lot more (C) | past (C) | | | Lloyd's (R) |
| 39 | names (R) | | | | | | Centrewrite (M) |
| 40 | | | | future (C) | | losses (R) | market (S) |
| 41 | names (R) | | some (C) | past (C) | falls (S) | | insurers (M) |
| 42 | capital providers (S) | | | future (C) | | | Lloyd's (R) |
| 43 | names (R) | old-year (C) | | past (C) | | | |
| 44 | | years . . . open (R) | some (C) | 1990 (M) | | | insurers (M) |
| | | | | year (C) | | | policy-holders (M) |
| | | | | earlier (C) | | | Lloyd's (R) |
| | | | | future (C) | up (S) | | |

| | | | | | |
|----|---------------|---------------|------------------|----------------|-----------------------|
| 45 | names (R) | | | | Lloyd's (R) |
| 46 | Members (S) | | | | managing agencies (M) |
| 47 | names (R) | minimise (C) | | | E&O insurers (M) |
| | | sums (C) | | | |
| 48 | names' (R) | Not all (C) | | | insurers (M) |
| 49 | | many (C) | | lose (R) | E&O insurers (M) |
| | | 1 billion (C) | | | reinsurance (C) |
| | | all (C) | | | Lloyd's (R) |
| 50 | | | | | E&O (C) |
| 51 | names (R) | three (S) | years (C) | | Lloyd's (R) |
| 52 | | many (C) | | bankruptcy (C) | policyholders (M) |
| 53 | names (R) | Some (C) | 1982 (M) | | agencies (M) |
| 54 | | | now (S) | down (S) | Lloyd's (R) |
| 55 | names (R) | | | | market (S) |
| 56 | | third (C) | 1990's (M) | | E&O insurers (M) |
| 57 | | | early 1990's (M) | | Lloyd's (R) |
| 58 | names (R) | three (S) | years (C) | rising (S) | insurance rates (C) |
| | | | back-dated (C) | | Lloyd's (R) |
| | | | 1990 (M) | | |
| | | | 1991 (M) | | |
| 59 | | | past (C) | | underwriting (C) |
| 60 | names (R) | | future (C) | | market (S) |
| 61 | | | | | new capital (C) |
| 62 | | few (C) | | | policyholders (M) |
| 63 | Names (R) | a lot of (C) | | | Lloyd's (R) |
| | investors (S) | two (S) | | | |
| 64 | | | | | |
| 65 | | | | | |
| 66 | | | 1990's (M) | high (C) | Lloyd's (R) |
| 67 | | | | | |

also significant here in that any discussion of a financial institution such as Lloyd's invariably requires a discussion of various financial issues and related areas of concern. This subject area is signaled clearly via the use of *FINANCE* as the department heading and the subsequent use of such terms as *insurance cycle, errors and omissions, E&O, underwriting, reinsuring, and new capital*. These are lexical items which could be reasonably expected to co-occur in a text on a financial topic or a topic about an institution like Lloyd's.

The relatively high occurrence of intersemiotic synonymy and repetition shows therefore that both the visual and the verbal aspects of the *Mountains* text complement each other in maintaining and supporting the central topic, while the significant use of meronymy and collocation work interactively to support a financial discussion. There is thus clear evidence of intersemiotic complementarity in the ways that both modes deal with the same topic area and pertinent terminology.

The *Rowland & Middleton, Boulder, and Upper ledge/slope* participant inventories for the sketch caricature in Tables 2.2 (i) and 2.2 (ii) lend further support to these interpretations. One of the main purposes of the sketch caricature is the identification of significant represented participants, the characters involved in the action portrayed, and any salient attributes they may have to assist in this identification. Both Rowland and Middleton are important characters in the discussion of Lloyd's problems and their possible solution, and we know this by virtue of the frequent use of the intersemiotic repetition of their names, as in *David Rowland, Peter Middleton, Mr. Middleton, and Middleton*, the intersemiotic synonymy of *two men*, and the use of lexical items which intersemiotically collocate with the idea of these two men in control of the represented participant boulder labeled as *Lloyd's* via *management team, chairman, and chief executive*. A further point of note is that there are no lexical items which semantically link to the represented attributes of the two men (the pin-striped suits connoting financiers); these attributes are acting in a supportive role in visual terms, making sure perhaps that if viewers don't recognize the two men as Rowland and Middleton immediately, they can see that the two men acting with the Lloyd's boulder at least should be there as people concerned with financial issues (as realized by the pin-striped suits, which indicate financial types from the 'City'). The two modes thus intersemiotically complement each other in terms of the main actors involved in the Lloyd's crisis.

The *boulder* is a visual metaphor for Lloyd's problems which the two men have to deal with. These are identified and mentioned throughout the verbal aspect of the text as the decreasing numbers of new names (or less active names), the increasing number of open syndicates, the potential for litigation, and the poor performance of the various investor agencies. Intersemiotic complementarity between the visual representation of these problems via the boulder and the verbal reference to them is realized via

the intersemiotic repetition of *problem* (the boulder's connotative meaning), and the extensive use of intersemiotic hyponymy of kinds or types of problems, as realized through the use of *lawsuits*, *writs*, and *litigation* (against investor agencies), *negligence* (of investor agencies), *losses* and *bankruptcy* (of profits), *open years* (increasing), *claims* (from natural disasters), and *bad publicity* (affecting confidence). There is thus a clear intersemiotic link between the visually represented and verbally discussed problems.

The *upper ledge* and *mountain slope* inventory, when interpreted in terms of the interaction between the two men and the mountainside, can be seen as a visual metaphor for a *solution* to Lloyd's problems, that is, the road to solving Lloyd's problems involves (at least in part) success at pushing this boulder up the mountain-side to the ledge and then perhaps further upwards—if they get up to the ledge Lloyd's will survive for the moment, but they still have to "surmount" the further problems (the upper slope). The ledge and the upper slope is a visual metaphor for the solution to Lloyd's current problems in that reaching this particular part of the mountain connotes an effective, successful settlement, while slipping back down the mountain connotes failure. The visual representation of Lloyd's attempts to deal with these problems is complemented through the intersemiotic synonymy evident in the use of *business plan*, *plan*, and *settlement* (referring to the rescue package set up to solve Lloyd's problems), the intersemiotic repetition of *solution*, and the significant usage of intersemiotic hyponymy in the types of actions proposed as part of this rescue plan, as in *reforms* (in the previous report), *cost-cutting*, *sacking . . . staff*, *make economies*, *amalgamation*, *centralization*, *higher underwriting standards*, *insulate newcomers* (from the past problems), *present a united front* (against claimants), *minimize the sums siphoned off*, and *budget measures*. These are all types of solutions that have been discussed in previous articles in *The Economist* magazine, and which can be subsumed under the superordinate classifier "solution," as visually connoted by the ledge and upper slope of the mountain.

The actions of the two men in the process *Climbing—pushing up*, represents their attempts at *enacting solutions with effort*, and as mentioned previously, there is a visually created sense that their actions involve making an effort or struggling with Lloyd's problems. The action portrayed is reinforced intersemiotically at the very beginning of the verbal aspect of the text by the intersemiotic repetition of *climb*, followed by the intersemiotic synonymy of *scaled* and *stepped up*. The supplementary attribute of effort being expended is also reinforced by the intersemiotic collocation of *boost*, *struggled*, *control*, *exert*, *spur*, *cope*, *contesting*, *ensuring*, *fighting* and *will-ingness*, all lexical items which could be reasonably expected to occur to varying degrees in any discussion of a topic involving the expending of commitment, effort, struggle, and strain. The metaphorical meanings here are important, in that the lexical items semantically related to the ac-

tions portrayed and their manner of being performed describe aspects of Lloyd's problems (as in: *Names who struggled to pay, insurers are fighting policyholders*) and the actions being taken to solve them (as in: *cost-cutting. . . is being stepped up, the center may exert some control; spur higher underwriting standards; willingness to listen*). These intersemiotic lexical items tend to semantically mirror the represented actions provided by the sketch caricature both in type and intensity, and they also refer to subject matter that has been treated in the texts previously published, thus providing an intertextual ideational dimension.

The physical place where the action takes place, the *Mountain*, is not as prominent intersemiotically as the two men, and the *boulder* (physically) is even less so. The mountain and the boulder however are important for their metaphorical narrative meanings. The mountain projects metaphorical meaning in terms of its past path, present situation, and possible future, and this is also shown in the inventory. The profile of the *Mountain (Lloyd's path—time/place)*, which denotes a circumstance of setting (where the action takes place), is not only important in terms of the visual meanings projected by the two men's (or Lloyd's) situation, what they are doing, and how they are doing it, the visually represented mountain also projects metaphorical meaning as a visual narrative showing the two men's (or Lloyd's) past path, present situation, and possible future. There is therefore a chronological connotation or metaphor projected, where the side of the mountain and the mountain itself connotes a narrative of the past, present, and future. The mountain as denoted setting is announced at the very beginning of the verbal aspect of the text by the intersemiotic repetition of *Mountain*, followed by *peak* (which forms an intersemiotic collocation with the visually represented mountain), and then *chunk* (which forms an intersemiotic collocation with the visually represented boulder). The lexical items *under*, *down*, *thin air*, and *high* also form intersemiotic collocations by being related to the positional and descriptive aspects of mountains and their physical settings. These work to supplement the visual setting represented in the sketch caricature. The mountain as a narrative metaphor for Lloyd's history and its future prospects, however, is also supported intersemiotically by the time references sprinkled throughout the verbal text. Because Lloyd's 'story' can be considered in terms of a period of time (past–present–future), then the intersemiotic relationship between the visual story and the aspects of the verbal story referred to in the text would seem to be one of intersemiotic meronymy (the whole being the period of time). The inventory bears this out through the repeated use of lexical items such as *last year*, *now*, *future*, and *past*, of which all could be considered as references to different parts of the whole time period. This is supported by the reference to Lloyd's future path with the title of the text *Mountains still to climb*, and the intersemiotic collocational use of *background*.

For the line graphs specifically, the two inventories in Tables 2.3 (i) and 2.3 (ii) for *Active names* and *Syndicates with open years* are also important. The main focus of the line graph visuals is the behavior, over time, of the number of Active names, and the number of Syndicates with open years. These are important represented participants, an importance reflected by the degrees to which they are semantically related to the verbal part of the *Mountains* text. Both the participants represented in these line graphs are intricately concerned with the problems that Lloyd's has, is having, and may have in the future. For Active names this is carried and reinforced strongly by using intersemiotic repetition of *names*, *active names*, and the supplementary use of intersemiotic synonymy with *capital providers*, *individuals who provide Lloyd's capital*, *members*, *capital providers*, and *investors*. In the Syndicates with open years intersemiotic repetition is also used via *syndicates*, *open years*, *syndicate years*, *successor year*, *years . . . open*, and *old year*.

The graphs focus on the behavior, over time, of the number of Active names, and the number of Syndicates with open years. Hence we have the two *1982–1983 (time)* and *0–35,000 (number)* inventories. With regard to time, the line graphs deal with the period 1983 to 1991–1993, which may be considered as a closed set of years. As this text is very much concerned with a discussion of what has happened, what is happening now, and potentially what may happen in the future, any lexical reference to this particular time period is an instance of intersemiotic meronymy because it is a reference to a part of that set of years. The instances of intersemiotic meronymy in the text such as *1989*, *1990*, *June, 1988*, *1990s*, *late April, 1991*, and *1982* are all segments of the time period 1982 to 1993. Discussion centered around the specific set of years is supported by general intersemiotic collocation with lexical items such as *last year*, *later years*, *now*, *premature*, *future*, *since then*, *past*, *earlier*, *recent*, and *back-dated*.

With regard to the treatment of the dependent variable *number*, the line graphs deal with the set of numbers ranging from 0 to 35,000, which may also be considered as a closed set. The instances of intersemiotic meronymy such as *5000*, *20,000*, *80*, *one*, *three*, and *two* intersemiotically complement this, as does the significant usage of intersemiotic collocation in *2 billion*, *double-counting*, *more*, *few*, *cumulative*, *40%*, *figure*, *sums*, *a lot more*, *some*, *minimize*, *third*, *a lot of*, etc. Instances of these kinds of lexical items may be expected to accompany any generalized discussion of money or numerical-related matters.

The portrayed action or processes in the line graphs are indicated by the verbally labeled *Slumping . . . mounting* graphic headings, both of which reinforce the underlying message focus of the two graphs—that of the increasing losses Lloyd's has been incurring as a result of the decrease in names and the increase in open-year syndicates. The general semantic concepts of slumping and mounting are signaled immediately in the inventories via the use of

intersemiotic repetition of *Mountain*, and continued throughout the text via the intersemiotic synonymy of the set *climb, scaled, down, stepped up, raise, falls, up, and rising*. Intersemiotic collocates of slumping and mounting include such lexical items as *peak, over, higher, and high*. The VME *Graphic focus—increasing loss* further supports the underlying focus of the information presented in the two line graphs, and this focus is consistently reinforced throughout the verbal aspect of the text by the intersemiotic repetition of the lexical items *losses, and loss*. This is supported by the strong intersemiotic collocation of *bankruptcy* and *losses* is contrasted with its logical opposite, the intersemiotic antonymy generated by *profits* and *profitable*.

The inventory for the verbal footer *Source: Lloyd's of London* in Tables 2.3 (i) and 2.3 (ii) gives the source of the data and acts as a Circumstance: locative, giving the setting for the graphic action. It is also a VME that is concerned with the main topic area of both the visual and verbal modes—the institution of Lloyd's of London and its problems. It is first and foremost acting as an identifier of the source of the graphic information displayed; however, in the verbal aspect of the text there is no specific lexical reference to it as that source. As the main subject matter of both the modes, however, the lexical items produced in the inventory for this VME mirror those listed in the inventory for the sketch caricature.

Looking at these results collectively, some interesting comments can be made about the nature of the intersemiotic complementarity between the visual and verbal modes in the *Mountains* text. First, the greatest numbers of instances of intersemiotic complementarity occurred in the two inventories concerned with the general subject matter of the text, that of the institution of Lloyd's of London. This is relatively unsurprising, but it does confirm that both visual and verbal modes do 'work together' on the page, at the very least in terms of the general subject matter, and this intersemiotic complementarity is realized mainly through a significant usage of intersemiotic repetition and synonymy, intersemiotic sense relations which perform the function of introducing and maintaining the topic and subject matter.

The next most significant VMEs were the dependent and independent variables of the line graphs, the period of time (1982–1993) and the set of numbers (0–35,000). Both work in concert with the verbal aspect of the text in terms of topic maintenance, or in ideational intersemiotic complementarity with each other in relation to discussing Lloyd's problems in chronological and numerical terms. This topic maintenance is further reinforced when the other VMEs are considered, because they are all concerned with subtopics of the main subject matter, and as such are further confirmation of ideational intersemiotic complementarity between the visual and verbal modes in dealing with the central topic area, the condition and problems of Lloyd's of London.

AN INTERSEMIOTIC INTERPERSONAL ANALYSIS

In terms of *visual address*, the sketch caricature and the mathematical line graphs can be interpreted as visual offers of information or statements. In the sketch caricature the absence of any gaze or facial expressions toward the viewer suggests it is simply offering information in the form of a portrayal or a scene the viewer can look at with really no requirement to react to other than to agree with the information presented, or to either acknowledge or contradict its existence or veracity as an acceptable scene. This interpretation is corroborated by the verbal support provided by the label *Lloyd's*, which simply labels or identifies the boulder as metaphorically representing the Lloyd's insurance market. The mathematical line graphs are also offering information. The represented participants form no other relationship to the viewer(s) than being simply a display of numbers and graphic lines which portray some interrelated information or data. The viewer is not asked anything about the information, and is basically offered information that can be agreed or disagreed with, acknowledged, or contradicted.

In terms of *level of involvement*, the frontal plane of the viewer of this visual (which is the same as that taken by its drawers) is perpendicular to the frontal plane of the most visually salient represented participants, the two men and the boulder caricature. There is thus a clear absence of involvement with the scene on the part of the viewer, not by choice (although that may be the case), but by the lack of involvement coded (or loaded) into the visual by its constructor(s). It is a scene which, because of the extreme obliqueness of the angle, puts the viewers in the place of those who are, as it were, watching from the sidelines—it is action played out on a tableau that requires nothing of the viewer except to observe and interpret the scene. This accords with the interpretation of the sketch caricature as a visual offer of information that can be agreed or disagreed with, acknowledged, or contradicted. The line graphs are also viewed from an extreme oblique point of view, which is really the only way that they can be viewed, as they are mathematical visuals representing their meanings on a two-dimensional plane. All viewers are positioned to view the information portrayed in an abstract graphic form as an offer of information with which they can agree or disagree, acknowledge, or contradict.

The *power relations* between the viewers and the represented participants in the sketch caricature and the mathematical line graphs form an eye-level angle between the viewer and the represented participants, and therefore do not place the represented participants in either a superior or inferior position.

In the sketch caricature, the degree of *social distance* between the represented (human) participants can be characterized as a long to very long shot, where their full figures are shown and a significant amount of the

physical context in which they are placed is also portrayed. This long to very long shot has the effect of making the figures portrayed seem to be part of a larger scene, and lends weight to previous interpretations which suggest the sketch caricature is presenting a scene which asks the viewer to do very little beyond simply observing the portrayal. For the mathematical line graphs, we can see that the size of frame differences really do not have any application, since choosing a long shot or close-up shot does not have any impact on how much of the graphs is shown—if using a close-up shot meant that some part of the graph was missing then the visual would cease to be a valid mathematical representation.

Up to this point we have two visuals which basically address the viewers with visual statements or offers of information, and which make no demands on the viewer to be involved in any way beyond being accorded at the very least a neutral or equal status. The viewer is therefore treated as an equal who is required to either accept or reject the offers of information made. These are not simply made to present bald facts and ideas however; they are made from certain viewpoints which encode various attitudes, and these relate to the area of *visual modality*.

In the visual semiotic code visuals can, like language, also be interpreted in terms of the truth, credibility, and probability of what they represent to the viewer(s), and the information they offer can also be affirmed or denied according to whether something is or is not, is real or unreal, as well as whether other possibilities exist which can express degrees of certainty or uncertainty (where *perhaps* something could happen), or of usuality (where something might *sometimes* happen, but not *always*). The interpretation of the degrees to which a visual is considered to be real or unreal, credible or incredible, possible or impossible depends in the first instance on its visual coding orientation. The sketch caricature is one type of visual from a continuum of naturalistic visuals which are considered to be real/unreal or possible/impossible depending on the degree of accuracy of their representation of reality. This visual coding orientation is concerned with the varying degrees to which naturalistic visuals (and by default their drawers) attempt to portray 'natural' images, visuals which the members of a particular cultural setting would agree to be a recognizable form of a representation of reality, as viewed by the human eye.

The sketch caricature is an attempt to represent familiar objects, entities, scenes, characters, or actions (real or fictional) that are easily recognizable to the viewers, but are abstracted via caricature. As such, it is not a totally accurate representation, but a stylistic drawing form in which the main features of the represented participants have been emphasized to present them from particular attitudinal viewpoints, ones which the drawer(s) hold and wish to convey to any potential viewer(s). The sketch caricature is a 'suggested' or 'loaded' interpretation of reality, and as such carries a lower modality in

terms of its representation of 'truth' than photographs or realistic sketch drawings. What is presented is not a true representation of reality, but a whimsical version of it. The absence of color and the abstraction away from many physical details in the sketch caricature which could have been included, such as additional facial and physical features, and landscape features such as plants, trees, etc., also adds to this relatively low modality. The emphasis in the sketch caricature is therefore not on accuracy or realism, but on presenting a subject in such a way that the main features are caricatured, and so drawing attention to the attitudes that the drawers wish to express.

The analysis of the ideational features of the sketch caricature shows that it projects a number of visual messages to its viewer(s), and as discussed earlier, its presentation in caricatured form accords varying degrees of credibility to the represented participants and visual messages, as well as bestows on it certain attitudes. The scene presented in the sketch caricature is not a realistic one; one would hardly see in the real world two be-suited financiers trying to push *anything* up a mountain-side, let alone one that is so much larger than them, and on a sharply steepening slope. It is an impossible situation, which allows the focus of the visual to be on the attitudes that the constructor of this visual hopes to impart to the viewers. It is an offer of information about a *suggested* metaphorical interpretation of reality. A closer examination of each of the represented participants reveals some interesting attitudes or dispositions. *Rowland & Middleton's* bodies are in proportion except for larger than usual head size and additional features such as glasses and facial features allowing them to be more easily recognized and differentiated. The viewer's attitude here is simple recognition. For the *Boulder*, the viewer is meant to associate it with Lloyd's problems and to see these problems as enormous in comparison to the two men dealing with them. The actions and body postures portrayed of the two men in *Climbing—pushing up*, encode an attitude of difficulty, of struggling with the huge, unwieldy problems of Lloyd's. For the *mountainside (lower slope, ledge, upper slope)*, the creator of this visual has loaded in a pessimistic attitude regarding Lloyd's and the two men's chances of survival. The impossible upper slope suggests that even if they solve the current problems (where the boulder is now), they face almost certain failure soon after.

The line graphs, as mathematical visuals, are aimed mainly at an audience that may or may not be familiar with more complex forms of graphic presentation, and would not be comfortable with the professional rhetorical and visual methods used in a professional economics journal. As shown in the analysis of the ideational features of the line graphs, there are a number of visual messages projected at the viewer(s), and their presentation in mathematical form accords varying degrees of credibility to the represented participants and hence the visual messages, as well as endows them with certain attitudes. What the line graphs are essentially doing is present-

ing, in largely neutral terms, information about the behavior of two important aspects of the Lloyd's of London insurance market. Their main focus is to present information in a mathematical format to inform the viewer(s) about the interaction between the represented participants and therefore the visual messages. There are, however, a couple of instances where the visual does address the viewer specifically with visual messages which require the viewer to adopt a specific attitude beyond the acceptance of a straightforward report of quantitative information. These are the use of the interpretative headline *Slumping . . . mounting* and the verbal footer *Source: Lloyd's of London*. The former is used to give a sense of a deepening concern about the future due to the increasing losses brought about by the decrease in names and increase in open syndicates, while the latter both informs the viewer(s) of the data source and asks them to accept it as authentic and accurate by this official *imprimatur*. This assigns a higher modality to the content—the viewer(s) should believe what they see.

The line graphs are therefore making visual statements by simply reporting data, and the viewers are asked to adopt an attitude of acceptance of them as believable instances of mathematical reportage. However, the viewers are also asked, through embedded verbal means, to adopt the attitudes inherent in the headlines, that of concern about, and a negative impression of the future. Here the headline in a sense anchors the attitudinal meaning of the mathematical modes, and could be seen as an instance of what Barthes (1977, p. 39) was referring to in his discussion of 'anchorage' in image-text relations, where the 'terror of uncertain signs' are somehow fixed by the verbal.

In the discussion so far we have seen that the main form of visual address is the one-way exchange of information between the text and its viewer/readers via visual offers of information or statements. In language, the order of the elements for forms of address is significant, in that the order Subject before Finite realizes the declarative (statement), and the order Finite before Subject realizes the interrogative (question) in the exchange of information. An analysis of the Subject/Finite relationship in the clauses in the *Mountains* text shows that all the clauses are declarative in Mood, and that they are realizing the unmarked speech function of making a statement. There are no clausal examples of interrogative or imperative Mood, and thus no evidence of questions asked (even rhetorically) or requests made, and no orders given to the readers. Given that the visuals also address the viewers in this way, we therefore have intersemiotic complementarity realized in terms of the ways that both the visual and verbal modes address the viewer/readers.

The level of involvement required by the viewer/reader supports this interpretation of the *Mountains* text as being a multimodal or composite offer of information consisting of visual and verbal statements. In the verbal aspect

of the text there are no attempts to directly involve the reader as the other interactant in this exchange of information via forms of direct address, such as reference to the reader as *the reader*, or the use of the second person pronoun *you*. Furthermore, there are no instances of the first person plural pronouns of *we/us/ours* used in the inclusive sense to draw the reader into the discussion, as in references such as: *As we saw in . . .*, or even, *As we can see in the chart . . .* which could draw the reader into a multimodal exchange of information. All singular and plural personal pronouns are in the third person, as in the use of *he/it/its* and *they*, and these are used throughout the text in referring to the situation, institutions, and people discussed.

Therefore, we have both the verbal and visual modes addressing the viewer/reader in the same way—they both make offers of information by making statements that can be agreed or disagreed with, acknowledged, or contradicted. The reader/viewers are not explicitly referred to, and are assumed in many ways to be simply the receivers of these multimodal statements. In terms of address and involvement there is evidence to confirm the proposition that the intersemiotic complementarity between the visual and verbal modes is realized by intersemiotic reinforcement of address.

Intersemiotic attitudinal congruence and dissonance in terms of visual-verbal modality is also interesting. In language, the truth or credibility of what is represented by a speaker or writer is expressed through the use of modality at the clause level, and the polarity between the affirmation and denial of this offered information is expressed in terms of whether something is or is not, or whether it is real or unreal (via the Finite element expressing polarity). In between these two extremes of certainty there are other possibilities which express degrees of certainty or uncertainty, where *perhaps* something could happen, or of usuality, where something might *sometimes* happen, but not *always* (Halliday, 1994, pp. 88–92).

As already pointed out, the line graphs are, while not of 'technical' quality in terms of professional publications, an accurate representation and report of what has actually happened with Lloyd's, and as such would be considered as definite visual statements of what is, or what is not, in quantitative terms. Interpersonal intersemiotic complementarity is also realized by the attitudinal congruence between what has happened (with names and open year syndicates), and the specific references to these events in the verbal aspect of the text. In the verbal mode statements regarding actual events are made initially about the recent past, covering the major problems that have arisen with Lloyd's losses (see Appendix, sentence 6). Statements about the nature of the increasing losses incurred follow (see sentences 12, 15, 16, 20). All of these statements are mirrored visually in the two line graphs by the general graphic message of increasing losses, and the quantitative representation of decreasing names and increasing open-year syndicates.

It follows then that if the line graphs as definite visual statements are related intersemiotically through attitudinal congruence to the verbal aspect of the text, then it is possible that this may also be the case with the sketch caricature—it is possible that this visual mode and the verbal mode project the same or similar attitudes in terms of the ways that they attempt to temper their statements. It was pointed out earlier that the sketch caricature is basically addressing the viewers in terms of visual statements, but that these were a suggested or ‘loaded’ interpretation of reality, which projects various attitudes in terms of its believability and possibility. As such it carries a lower modality in terms of a representation of truth than photographs or realistic sketch drawings. It is not stating what is true or false as the line graphs generally are, but is projecting to the viewers a range of attitudes about the situation at Lloyd’s which can be placed somewhere in between.

Halliday (1994, pp. 88–92) distinguished three degrees of modality in the SFL model which relate to three degrees of confidence, or lack of confidence about what a speaker feels toward the truth or otherwise of a proposition: low, median, and high modality. There are some general patterns in the use of modality that suggest varying degrees of attitudinal congruence between the two modes in the *Mountains* text. Some instances of these are shown in Table 2.4, and what is immediately apparent is that the VMEs representing Lloyd’s problems (the Boulder), the business plan (the action of Climbing—pushing up), and the two financiers (Rowland & Middleton) in

TABLE 2.4
Modality Features of the Sketch Caricature

| <i>Rowland & Middleton</i> | |
|-----------------------------------|--|
| 23 | It is an inauspicious background for Lloyd’s first-ever business plan, which will be unveiled by Messrs Rowland and Middleton in late April. |
| <i>Boulder (Lloyd’s problems)</i> | |
| 11 | . . . the market’s loss for 1990, to be announced in June, will be bigger than that for 1989 . . . |
| 15 | . . . the 1990 losses will be more widely spread; few names will avoid them. |
| 19 | Names who struggled to pay 1989’s losses last year will find it even harder to meet 1990’s. |
| 21 | Already 84% of names have at least one open year; by June that figure will be close to 100%. |
| 39 | And names who are relatively free of these burdens will protest against any tacit mutualisation of losses. |
| 40 | Those with an eye to the future say that Lloyd’s must insulate newcomers from the cost of the past—otherwise nobody, individual or incorporated, will join. |
| 58 | But names cannot touch those profits . . . ; meanwhile, they must meet losses for 1990 (and perhaps 1991). |

(Continued)

TABLE 2.4
(Continued)

| <i>The Mountainside (upper slope = future)</i> | |
|--|--|
| 10 | Such optimism now seems premature. |
| 11 | . . . the market's loss for 1990, . . . will be bigger than that for 1989, probably close to £3 billion. |
| 12 | Admittedly, a chunk of this [loss]— possibly £500m-l billion—is a form of double-counting . . . |
| 42 | By showing that capital-providers can find the exit blocked, however, such a move could deter new names from signing up. |
| 44 | But that [concentrating old-year claims and reserves in a single body] may not do much to close years that are open . . . |
| 47 | Mr Middleton points out that, if prospective litigants could settle with the E&O insurers, . . . it would minimise the sums siphoned off by lawyers. |
| 51 | It means at least three years of bad publicity for Lloyd's, which might put off not only new names but also new policyholders. |
| 52 | It [litigation] could drive many agencies into bankruptcy. |
| 57 | Rising insurance rates should make the early 1990s profitable. |
| 60 | But any borrowing to pay for past losses could run foul of the trade department's solvency rules . . . |
| 62 | And profits may not , in the event, materialise; |
| 66 | If the plan cannot solve the open-year problem, . . . Lloyd's may not survive. |
| <i>Climbing—pushing up (the solution)</i> | |
| 23 | It is an inauspicious background for Lloyd's first-ever business plan, which will be unveiled by Messrs Rowland and Middleton in late April. |
| 24 | The plan, which will set Lloyd's future course, is now being discussed by its market board. |
| 32 | Most of this [solutions] will be welcomed by names. |
| 45 | The business plan will have less to say about the lawsuits lodged by Lloyd's own names. |
| 36 | The business plan will certainly discuss open years; |
| 37 | The plan may suggest a bigger job for Centrewrite, the Lloyd's-owned insurance company . . . |
| 25 | According to Mr Middleton, its proposals could be more radical than the reforms suggested in last year's taskforce report . . . |
| 56 | A bond issue is also talked of as a possible solution for the third problem, financing 1990's losses—which the business plan may not even discuss. |
| <i>Lloyd's</i> | |
| 38 | But Centrewrite will need a lot more capital from the market |
| 40 | Those with an eye to the future say that Lloyd's must insulate newcomers from the cost of the past . . . |
| 29 | The centre may exert some control . . . |
| 3 | If April's business plan for Lloyd's does not satisfy both its capital providers and its clients, the market could die. |
| 51 | It means at least three years of bad publicity for Lloyd's, which might put off not only new names but also new policyholders. |
| 53 | Some names reckon that, . . . Lloyd's itself could be held liable if it were shown to have acted in bad faith. |
| 54 | If they are right, that could close down the whole market. |

the sketch caricature, and those representing the names (Active Names), and the idea of increasing losses (Graphic Focus and Slumping . . . mounting) in the line graphs, make significant use of high modality (the use of *will, must, certain, certainly, surely, and certainty*) to project to the readers high degrees of certainty with their propositions. This accords with the sketch presentation, which has as its premise the shared assumptions by the reader/viewers and the drawer that Lloyd's has current and future problems to deal with, and the graphical presentation of factual information to show how the numbers of names are increasing and that this also means increasing losses. The situation and problems portrayed are real ones, and so are accorded a higher modality.

On the other hand, as Table 2.4 also shows, the treatment of the VMEs concerned with discussions about what will happen in the future (The upper slope of the Mountainside) shows a very significant use of low modality (the use of *may, might, could, possible, possibly, perhaps, and possibility*) to project to the readers the possibility that something may be true, as opposed to the relative certainty attached to the shared-understanding about Lloyd's problems. This is synonymized by the sketch presentation of the upper mountainside, which is a visual metaphor for Lloyd's future. What can be seen here is that the drawers obviously consider Lloyd's future to be bleak, with further *Mountains to climb*; however, the fact that the scene is caricatured gives it the sense that it is a *suggested* future, and this is mirrored by the low modality accorded this aspect of the text's treatment of the same issue, as the penultimate sentence (66) makes clear in *Lloyd's may not survive*. The authors in a sense seem to be hedging their bets here in that *may not survive* doesn't seem to match the extreme upward slope of the mountainside in the visual. As Jewitt and Oyama (2001) suggest, images are able to portray extreme positions which are tempered when referred to in words; it seems that what can be depicted in a caricature can be stronger (and perhaps closer to what the authors actually feel). By positioning the reader as accepting or rejecting what is said and what is portrayed, the intersemiotic effect here might be that the readers read *may not survive* as *probably won't survive* (a higher modality), because they are anchoring the pictures with the words (Barthes, 1977).

Thus, in terms of the degrees of attitudinal congruence realizing intersemiotic complementarity between the two modes in the *Mountains* text, we find that there are three general areas. The first is the attitudinal congruence between the definite statements made by the line graphs and the discussion of them in the verbal aspect of the text. The second is the attitudinal congruence between most of the VMEs in the sketch caricature and the line graphs and the high modality displayed in their treatment, and the third is the attitudinal congruence between the VME dealing with Lloyd's future in the sketch caricature and the relatively lower modality in

evidence in the verbal aspect of the text. A fourth aspect could also be added here, and that is the lack of attitudinal dissonance, where opposite or ironical attitudes are displayed between the two modes. Based on this analysis it is clear that both modes are placed on the page to work in concert, to offer information via both verbal and visual statements, and to ensure that the ways that it is received and dealt with by the viewers and readers are synonymous. This of course accords with the stated aims of the graphic design team at *The Economist* magazine, in that images are generally used to attract the reader to the written article, and mathematical visuals are to support the propositions presented (Garrett, 1994). Of course the use of irony across modes is one of the more popular ways used by graphic designers to attract readers to articles in some magazines, but in *The Economist* magazine, at least in terms of its treatment of a financial issue like Lloyd's, propositional and attitudinal congruence is used consistently.

An examination for further evidence of attitudinal intersemiotic complementarity between the visual and verbal modes reveals a number of features that lend further support to these conclusions of attitudinal congruity. The two most significant instances of intersemiotic complementarity in these terms are concerned with the visually represented men, *Rowland & Middleton* (the two financiers), and *the Boulder* (Lloyd's problems). The intersemiotic attitudinal features relevant to these represented participants are realized by the use of forms of address and attitudinal adjectives in the verbal aspect of the text and their coherence in a synonymous way with the visual attitudinal message elements. The first and most obvious feature here is the nature of the references or forms of address used for Middleton and Rowland in the verbal aspect of the text, and how this is complemented by their represented visual attributes. Despite their caricaturization, they are treated with perhaps a modicum of respect—they are portrayed in pinstriped suits which accord them some kind of official status, and even though they are portrayed as having a difficult immediate and future task, they are not portrayed as incompetent or as unable to cope. This portrayal is mirrored in the forms of address used for identifying them in the verbal aspect of the text. Both men are introduced initially in terms of their positions in Lloyd's through *David Rowland as chairman and Peter Middleton as chief executive*, both of which are positions of power and responsibility (sentence 9). They are then referred to throughout the rest of the text by the respectful titles of *Messrs* and *Mr* (see sentences 23, 25, 28, 35, 43, 47, and 59 in the Appendix), thus according them some respectful hedging on the part of the writers (perhaps this may change if the business plan they have produced fails). What is interesting in this respect also is that in the very last section of the article, where the writers are commenting on Lloyd's prospects and drawing conclusions from the preceding analyses, the respectful titles are dropped, Middleton and Rowland are mentioned by their last

names only (sentence 63), and are finally and simply referred to as *The two men* (sentence 64).

The other significant instance of intersemiotic complementarity in terms of attitudinal features are the references made to the magnitude of Lloyd's problems, as represented by the visually salient boulder, and by the use of adjectives referring to Lloyd's problems in general, the size of its problems with increasing losses, and the need for raising enough sums of money. The losses are initially referred to in straightforward comparative terms as being *smaller* and *bigger* than what they are compared to. This occurs in the first 11 sentences of the text, the section which is basically concerned with orienting the reader by reporting the background situation. However, once the background is reported, and the analysis of Lloyd's problems starts, the attitudes to the losses change in nature to the use of much stronger adjectives such as losses which are *huge* (sentence 16), and *too big* (sentence 20). The problems in general that Lloyd's is having are simply *big* (sentence 33), and the sums of money needed to help are *huge* (sentence 34), or the sources of funds to help are *too small* (sentence 49).

In terms of the attitudes projected by the line graphs and in relationship to the verbal aspect of the text there is also evidence for intersemiotic complementarity in attitudinal terms between the modes. This can be seen for example in the general graphic focus which conveys the sense that Lloyd's is experiencing increasing losses. Both graphs portray this loss in numerical form, and the headings provide an interpretation in terms of the fact that these losses are continuing and increasing. As mentioned already in relation to Lloyd's problems, the losses are initially referred to in straightforward comparative terms as being *smaller* (sentence 8) and *bigger* (sentence 11) than what they are compared to, and they become losses which are *huge* (sentence 16), and then *too big* (sentence 20). So there is a visual-verbal *attitudinal reinforcement* in terms of the sense of experiencing losses and the variation in their magnitude. This interpretation is reinforced when one considers the fact that the graphs are drawn in such a way as to emphasize this sense of being *huge*, and then *too big*. The expression of the rate of change of a variable over time is precisely the function of this type of line graph, and the degrees of change (i.e., magnitude) can be varied by manipulating one or both axial scales. In this case the scales of the graphs are compressed to make the slope of the graphic lines more acute than if they would be if the year scales were more expanded, with the result that the year-on-year rate of change seems to be greater and the sense of the magnitude of the changes accentuated (the same is actually true of the boulder and the mountain slope. The boulder might not be considered so huge if the slope were not so extreme; it is the size of the problems in relation to the future prospects that seems to be at issue).

The occurrence of these two significant uses of support for the attitudes expressed in the visuals lends weight to the interpretations of the visuals in terms of their main visual message focus—that of the problems that the management of Lloyd's are having and will have with the magnitude of its financial problems. In both the modes the two men are referred to in reasonably respectful terms, and the attitudes projected regarding the magnitude of the problems that Lloyd's is having are also attitudinally congruent. Thus we have, in interpersonal terms, further evidence that both the verbal and visual modes intersemiotically complement each other to produce a coherent multimodal text through reinforcement of address and attitudinal congruence. What we do not have, despite the irony represented by the impossible scene of two men struggling up a mountainside (and the obvious reference to Sisyphus), is any instance of intersemiotic attitudinal dissonance. In this text the intersemiotic interpersonal features work in concert to project a coordinated attitudinal message.

AN INTERSEMIOTIC COMPOSITIONAL ANALYSIS

There are a number of important visual-verbal compositional aspects in this text that show both modes work together to produce this coherent and unified visual-verbal message to the readers.

A consideration of *information valuation on the page* is interesting in that the vertical or top-bottom placement of the visuals on the page shows that the sketch caricature is placed in the lower status half of the page, but this loss of vertical prominence is compensated by its placement in a primary position in relation to the spine, and the fact of its visual salience in terms of size and color saturation (a casual reader flipping through the magazine will more easily see the sketch caricature first and may be attracted to the article because of the nature of the sketch or the inherent humor of the situation portrayed; this accords with the 'attract' function of sketch caricatures, which is to grab the reader's attention).

On the other hand, the line graphs visual is placed in the center of the top half of the page, a primary position in terms of visual weight, and as a divider or balancing center between the two halves of the type. Despite the fact that one of the functions of composition is to be engaged in "striving for unity" (Arnheim, 1988, p. 133), the line graph seems to divide the verbal aspect of the text, to force it to go around the visual frame. This "invasion" of the page space is accentuated by the dividing lines of the graphic borders and the use of the runaround. However, one of the functions of a central placement is that perceptually, for the viewer, central placement also acts as a "stabiliser of weight," where visual elements are "located in the central area or on a centrally located axis gained in power" and help the ob-

jects outside the center zone to be “united and stabilized when they are grouped around the balancing centre” (p. 133). Thus, the “invasion” of the verbal page space is stabilized by the central placement of the visual, and the sense of compositional unity and intermodal coherence is maintained.

The relative sizes of the visuals compared to the verbal aspect of the text in relation to the space taken up by each on the page, referred to as *salience on the page*, also illustrates how important the elements are to the compositional makeup of the text. White (1982, p. 127) asserted that in compositional terms size is an indicator of visual importance, so a graphic designer should “Signal the Big Idea of the story in the Big Picture—and make that big picture as big and as dominant as possible.” In the *Mountains* text the size of the sketch caricature in relation to the amount of space taken up by the typewritten text shows that it is a very significant part of the page and has an important part to play in the multimodal transmission of the thesis of the text. This significance is accentuated by the fact that the bottom right-hand corner of the page is dominated by the color saturation of the thick blackness of the mountain, and the vertical and horizontal edges of the corner frame extend well over 50% of the distance of the page borders. The line graph is also visually salient in terms of the surrounding type, taking up a significant proportion of the available space in the top half of the page.

In terms of the *degrees of framing of elements on the page*, the first and most obvious feature is the fact that both the visuals compete to varying degrees with the verbal aspect of the text for page space. With the sketch caricature this sense of competition is realized by the fact that there is no uniform division between the verbal (type) space and the visual space of the sketch caricature. If there were a typical clear division in framing terms, there would most probably be a line border, or an orderly (linear) clear space around the visual to delineate it clearly. Here, however, the sketch caricature forces the type to conform to its shape, a technique referred to as a *runaround* and purposely used by graphic designers for effect. White (1982) suggests this is a risky technique in design terms however, because whenever it is used there must be some sacrifice in legibility (pp. 106–107). This also creates problems for the typesetter in that the type has to be arranged around the visual in such a way that the reader’s reading path is not too disrupted, so that there is a clear even space between the visual and the type, and so that the arrangement of the elements on the page in relation to each other does not create a sense of disunity or disharmony.

The dangers in using the runaround can be minimized by adapting the type in some way (usually by changes in font, size, or bolding), but in the *Mountains* text this is not done. The severity of this “battle” for space created by the variable runaround on the page between the sketch caricature and the type is however compensated for by the use of the visual as a page

corner-framing device. The bottom right corner of the sketch caricature acts as a continuation of the page frame, thus lessening the sense of conflict and giving it a greater sense of inclusion with the type, and a feeling of flow and of compositional unity with the whole page. The bottom right-hand corner of the visual actually replaces the type and conveys the visual sense that it is part of the visual frame. Despite this competition for space, the overall effect for the reader is of compositional complementarity, that the sketch caricature forms an integral part of the page, and the two modes in a sense “melt” or blend with each other. In this way, there is an intersemiotic compositional cooperation which conveys to the reader a sense of visual unity, and lends compositional support to the intersemiotic semantic relations in the text.

The same can be said about the visual-verbal compositional interaction between the type and the line graphs. Here the type is again forced to conform to the visual via the use of a linear, evenly spaced runaround. However, the disruption to the type caused by this technique is minimized by the effect created by a more conventional linear border used to cordon off or frame the visual in a clearer and more severe way. There is some contention for page space, but the more conventional runaround in combination with the linear border allows the reader to retain a sense of uniformity and complementarity between the two semiotic modes.

An examination of the visual-to-visual interface shows some interesting features in terms of how the two different visual coding orientations, naturalistic and mathematical, complement each other in supporting the realization of the intersemiotic complementarity between the visual and verbal modes. The intersemiotic relation relevant here is *intervisual synonymy*, a relation concerned specifically with the degrees of semblance in form across visual modes that work to present a kind of cross-modal harmony. This kind of intervisual synonymy can be seen between the sketch caricature and the line graphs, where there are subtle visual harmonies created by the axes they contain. In both visuals, the information that is to be conveyed is above and to the left of the point of origin from which the actual and perceived “x, y” axes can be derived. This axial similarity across modes conveys to the viewer a sense of visual harmony in that the focus of the information they are both presenting is a left to right, climbing/ascending, rising/falling action, and a sense of energy, dynamism, and variability. These are realized by the intersemiotic correlations between the upward slope and the rising graph lines, the ledge and the graphic peak (two pausing places), and the downward slope and the falling graph lines. This compositional complementarity is even further reinforced in the sketch caricature mirroring the right-hand line graph’s movement, a movement from left to right up a steep(ening) slope to the ledge or peak, and the further rising and steeper slope. The semantic thrust of the verbal headlines *Slumping . . . mounting*

lend Ideational verbal support also, where the sketch caricature shows someone mounting a slope, and the right-hand line graph shows the numbers of something also rising.

The importance of *potential reading paths* is related to the ways that the page space is approached, or the directions that readers of a multimodal text take when they interact with an article. Interpreting visual-verbal intersemiotic relations in terms of Given-New organization (Kress & van Leeuwen, 1996), and assuming that the visuals should and most likely would be read with a left to right reading path by their potential viewers, we find a clear link between the narrativization inherent in the visuals and the text's organization at the level of discourse. The action portrayed in both the sketch caricature and the line graphs is not simply projected as action in isolation, but is in fact action as part of a narrative which through visual means projects past, present, and future meanings. This narrativization in the sketch caricature is seen in the profile of the actions of the two men attempting to ascend the mountain-side under a heavy burden, where the Given is the represented past path they have already trodden (to the left of the boulder and below their feet) and the represented current position of the boulder (the point where it touches the mountain). The New however is the represented upper slope (the expected future or path they have to tread (the entire slope to the right of the boulder)).

This narrativization can also be seen in the line graphs where the action in the graphic lines' movement up and down along the vertical plane is to be interpreted according to the passage of time (these movements and what they represent in quantitative terms are mostly Given in that they are reporting the past and the current situation, or that which should be understood as fact). The narratives portrayed in these visuals are realized in visual terms by the directional vectors produced by the represented participants, the culturally based left to right reading paths, and the supplementary support provided by the effects of visual salience and balancing centers produced by the visuals themselves.

The division into past, present, and future time periods or scenes in the two visuals, as well as their status as Given or New information, is inter-semiotically complemented by the stages of the discourse structure of the *Mountains* text. Both visuals report on the past in terms of what has happened with Lloyd's and its problems in recent years. The verbal aspect of the text sets up the analysis of Lloyd's problems leading up to the current situation by referring to the major problem areas it has been dealing with: decreasing names, lawsuits, the effects of these on the market (sentences 1-22). The present situation of Lloyd's is projected in visual and verbal terms also, in that the line graphs show current data, and the sketch caricature represents the two men and the boulder at a certain point on the mountain-side. This is mirrored in the verbal aspect of the text by a discus-

sion of the rescue plan and the people involved with it (sentences 23–31). The New or future information is also presented by the sketch caricature (the upper slope) and to a degree the syndicated line graph (data over the years 1990–1991—an obvious prediction about the graph’s future movement since no data is available due to the system of back-dated reporting), and this is complemented by the verbal analysis of the current situation, and the opinions and predictive conclusions that are expressed and which are based on that analysis (sentences 32–67).

CONCLUSION

This chapter has proposed that the visual and verbal modes co-occurring in page-based multimodal text complement each other semantically to produce a single textual phenomenon in a relationship which can be referred to as *intersemiotic complementarity*. It has been found that this relationship can potentially occur via one or more of the following features:

when the ideational meanings in both modes are related lexico-semantically through intersemiotic sense relations: *repetition, synonymy, antonymy, hyponymy, meronymy, and collocation*.

when the interpersonal meanings in both modes are related through intersemiotic *reinforcement of address*, and through intersemiotic *attitudinal congruence* and *attitudinal dissonance* (modality) relations.

when the compositional meanings are integrated by the compositional relations of *information value, salience, visual framing, visual synonymy, and potential reading paths*.

The antithesis of this proposition of course is that while the verbal and visual modes utilize the meaning-making features peculiar to their respective semiotic systems, the visual semiotic and verbal semiotic simply co-occur on the page space and have a simple relationship of conjunction—they simply co-occur and do not work in concert to project a unified, coherent text.

Clearly, this is not the case with the *Mountains* text. The intersemiotic analysis of the *Mountains* text in this chapter has revealed it to be a complex multimodal text in which the visual and verbal modes complement each other on the page: The relationship is synergistic in nature, a concept which describes the ability of elements, in the act of combining, to produce a total effect that is greater than the sum of the individual elements or contributions.

This analysis has also provided evidentiary support for Halliday and Hasan’s (1985, pp. 4, 10) assertion of the interrelatedness of systems of

meaning, and the results show that some of the concepts and terminology of existing linguistic theory and their attendant analytical tools have potential for explaining how semiotic systems interact. Thus, the concept of sense relations in lexical cohesion as outlined by Halliday (1994, pp. 330–334) and Halliday and Hasan (1976, 1985, pp. 80–82), and the analytical tool of cohesive chains have proved to be adaptable and useful for a task of this nature. Finally, like other previous work on multimodality, this analysis has applied and extended the Systemic Functional Linguistic concept of meta-functions to multimodality in text (Kress & van Leeuwen, 1990; O’Toole, 1994, 1995).

The framework and its application have implications for first and second language education: They demonstrate just how complex multimodal literacy can be (New London Group, 2000). A student faced with a textbook-based (or even Web-based) article in a magazine or chapter in a textbook would need to interact with it in complex ways. In other words, the reader would need to understand the article’s mode-specific processes, their participants and the circumstances being referred to, as well the relationships between one process and another, or one participant and another which share the same position in the text. The reader would also need to distinguish the speech functions being used, whether the article is making an offer, providing statements, asking questions or commanding, as well as the attitudes and judgments embodied. The reader would also need to appreciate the news value and topicality of the message reported, or its relevance to the context in which it occurs, as well as the coherence between one part of the article and every other part on the page and in the textbook. Many of these issues are explored in chapter 12 in this volume dealing with communicative competence in the TESOL classroom.

APPENDIX—SENTENCE DIVISION OF THE MOUNTAINS TEXT

1. **FINANCE**
2. **Mountains still to climb**
3. **If April’s business plan for Lloyd’s does not satisfy both its capital providers and its clients, the market could die**
4. ONE peak scaled often reveals another.
5. So it is at Lloyd’s, London’s insurance market.
6. Last year was awful: the market reported losses of over £2 billion (\$3.3 billion) for 1989, lawsuits alleging negligence mushroomed, and names (the individuals who provide Lloyd’s capital) were outraged by a levy to boost central funds.

7. But some said the worst was over.
 8. Losses for 1990 would be smaller; as the insurance cycle turned, later years would bring profits.
 9. And the new management team of David Rowland as chairman and Peter Middleton as chief executive would improve market efficiency and placate angry names.
-
10. Such optimism now seems premature.
 11. It has become clear that the market's loss for 1990, to be announced in June, will be bigger than that for 1989, probably close to £3 billion.
 12. Admittedly, a chunk of this—possibly £500m-1 billion—is a form of double-counting, for it represents stop-loss payments to names who made losses in 1989 and syndicates' "errors and omissions" (E&O) reserving against names lawsuits.
 13. Both of these involve payments by one lot of names to another, not a net market loss.
 14. But the money still has to be found.
 15. And whereas 1989's losses were concentrated on the 5,000 names in excess-of-loss catastrophe syndicates, the 1990 losses will be more widely spread; few names will avoid them.
-
16. The cumulative effect of huge losses is undermining the market.
 17. As names resign or go bust, Lloyd's capacity has shrunk.
 18. The market now has just under 20,000 active names with an underwriting capacity of £8.75 billion, down by 40% in real terms from 1988.
 19. Names who struggled to pay 1989's losses last year will find it even harder to meet 1990's.
 20. And most are trapped in "open years"—syndicate years with losses that are too big and unpredictable to be closed by reinsuring into a successor year.
 21. Already 84% of names have at least one open year; by June that figure will be close to 100%.
 22. Members with open years can stop underwriting, but they cannot leave Lloyd's.
-
23. It is an inauspicious background for Lloyd's first-ever business plan, which will be unveiled by Messrs Rowland and Middleton in late April.

24. The plan, which will set Lloyd's future course, is now being discussed by its market board.
25. According to Mr Middleton, its proposals could be more radical than the reforms suggested in last year's taskforce report—partly because the huge losses revealed since then have softened resistance to change.
26. Cost-cutting, for instance, is being stepped up.
27. Lloyd's is sacking central staff; agencies are following suit.

28. Mr Middleton thinks he can push through reforms, even though the members' agencies that look after names and the managing agencies that run syndicates are fiercely independent.
29. The centre may exert some control because the agencies all trade under its brand-name.
30. He wants to raise professional standards, and to make economies through amalgamation and centralisation of some functions, including those now spread among 80 members' agencies.
31. He is also keen on corporate members, both to help the market grow and to spur higher underwriting standards.

32. Most of this will be welcomed by names.
33. But it leaves three other big problems: open years, litigation and financing the 1990 losses.
34. The main reason that these are so tricky is that they all involve huge sums of money.
35. Mr. Rowland likes to say that he has no magic lamp to rub which can produce money from thin air.

36. The business plan will certainly discuss open years; it has to, for finding an exit route has become most names' top priority.
37. The plan may suggest a bigger job for Centrewrite, the Lloyd's-owned insurance company set up in 1991 to offer quotes to syndicates unable to close their accounts.
38. But Centrewrite will need a lot more capital from the market if it is to cope with the hangover of past claims, especially those arising from American asbestosis and pollution for which insurers are contesting liability in court.
39. And names who are relatively free of these burdens will protest against any tacit mutualisation of losses.

40. Those with an eye to the future say that Lloyd's must insulate newcomers from the cost of the past—otherwise nobody, individual or incorporated, will join.
 41. Some have suggested leaving all 1990 accounts open, for instance, thus ensuring that no claim from that year or earlier ones falls on future names.
 42. By showing that capital-providers can find the exit blocked, however, such a move could deter new names from signing up.
 43. Mr Middleton sees a case for concentrating old-year claims and reserves in a single body, to present a united front to claimants.
 44. But that may not do much to close years that are open because insurers are fighting policy-holders or their successors, through American courts (although some recent decisions have been helpful to Lloyd's).
-
45. The business plan will have less to say about the lawsuits lodged by Lloyd's own names.
 46. Members' and managing agencies have been deluged by writs from angry names convinced that they are the victims of negligence rather than bad luck.
 47. Mr Middleton points out that, if prospective litigants could settle with the E&O insurers who would have to pay whenever claimants won, it would minimise the sums siphoned off by lawyers.
 48. But the insurers are not keen to settle on the names' terms.
 49. Not all the claims are equally strong; many E&O insurers have reinsurance outside Lloyd's that they can claim on only if they lose in court; and the E&O pot of about £1 billion is anyway too small to cover all litigants.
-
50. Letting the litigation run is dangerous, however.
 51. It means at least three years of bad publicity for Lloyd's, which might put off not only new names but also new policyholders.
 52. It could drive many agencies into bankruptcy.
 53. Some names reckon that, despite its immunity from most lawsuits under the 1982 act, Lloyd's itself could be held liable if it were shown to have acted in bad faith.
 54. If they are right, that could close down the whole market.
 55. Hence, the angry names argue, the case for a generous settlement now, drawing not only on the reserves set aside by E&O insurers but also on borrowing through a bond issue by Lloyd's.

56. A bond issue is also talked of as a possible solution for the third problem, financing 1990's losses—which the business plan may not even discuss.
57. Rising insurance rates should make the early 1990s profitable.
58. But names cannot touch those profits for another three years, under Lloyd's system of back-dated accounting; meanwhile, they must meet losses for 1990 (and perhaps 1991).

59. Mr Middleton would like to help those who want to continue underwriting.
60. But any borrowing to pay for past losses could run foul of the trade department's solvency rules (though some see the Treasury's modest budget measures to help names build reserves as a sign of government sympathy).
61. Mortgaging future profits would make the market less attractive to new capital.
62. And profits may not, in the event, materialise; few people expected the New York bomb or America's recent storms.

63. Names, policy-holders and prospective investors are pinning a lot of hope on the Rowland/Middleton business plan for Lloyd's.
64. The two men win plaudits for their willingness to listen to both suggestions and grievances.
65. But good intentions are not enough.
66. If the plan cannot solve the open-year problem, help head off litigation and find a way of meeting 1990's losses, Lloyd's may not survive.
67. The stakes are that high.

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