Constructing n(ews)-space:

a theoretical model for the organisation and visualisation of complex and dynamic networked information flow

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Contents

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Abstract

This thesis aims to develop a new concept for the communication of digitised information, specifically with reference to the organisation and visualisation of that information being communicated. The concept being developed - one centring around a spatial metaphor and the seamless consumption and interaction of and with electronic data - is applied directly to news. News - a mature and complex example of dynamic information storage and dissemination - is considered to be a pertinent examplar through which to illustrate the concept and its multifaceted aspects for dynamic data display. By using news as a model, it is possible to offer an indicative commentary on and of its use or application upon forms of information transfer. However, this is not explicitly flagged within the thesis since news is selected as - and remains - its focus throughout.

The research presents an informed outline for a theoretical model for the management and processing of complex and dynamic information flow. The first part of this thesis is concerned with empirical review and with the construction of a theoretical model through which three forms of news communication are analysed and appraised, focusing specifically upon their hard, soft and firm communicative structures. Following this, a number of communicative structures are identified from the analyses' results.

The second part of the thesis is framed by an analytical discussion of the model's six key communicative structures: notions of an electronic news-space; spatial organisation of image and text; aspects of dynamic news; explicit visualisation of hypertextual links and networks; the redefinition of electronic columnar structures; and user-interaction through rolling-over and clicking. These form the foundation for a hypothetical, prototype n-space - a system which allows access to electronic information by a process of intuitive, active exploration in a four-dimensional, dynamic, responsive environment - whose potential for practical implementation and evaluation is acknowledged.

List of illustrations

1 Introduction

This thesis aims to develop a new concept for the communication of digitised information, specifically with reference to the organisation and visualisation of that information being communicated. The concept being developed - one centring around a spatial metaphor and the seamless consumption and interaction of and with electronic data - is applied directly to news. News has been selected for the model's practical application and it is recognised that other complex and dynamic communicative systems are possible, although they aren't discussed within this thesis. It is recognised, however, that while the content of these other or potential applications may be quite different, the model's underlying theories, or deep structures, would remain the same.

Within this introduction I will discuss the nature of the research undertaken, it's remit and key aims; the nomination of news as the model's practical focus and its related issues; the use of a spatial metaphor within the research and - finally - outline a brief overview of the thesis content.

1.1 Nature of the work

In terms of its genealogy, the research developed from a design project which posed one problem concerned with the developing digitisation of news and subsequent effects upon its communication and presentation. Certain practical responses to this problem led to a refocusing upon the identification of broader issues concerned primarily with the electronic communication of information. From there it became possible to represent this problem, question or project as one whose key concern was fundamentally associated with and largely centring around - in its broadest sense - electronic information design within a clear theoretical context.

With developments in electronic communications technologies comes the opportunity to readdress or reappraise certain aspects of communication design. Current technological change evident in the rapid growth of the internet and mobile telephonies, for instance presents a new space within which designers may work or present or publish their work. The overriding aim of the research, therefore, is to attempt to reframe aspects of communication design for these so-called new media.

It is this research's key aim to develop a theoretical model for a system which allows access to electronic information by a process of intuitive, active exploration in a four-dimensional, dynamic, responsive environment.

The process of forming the model can then be reduced to the following series of aims and objectives:

- i. to formulate a theoretical or communicative framework through which a focused analysis of news can take place

- ii. to record news, observe and analyse aspects of it; specifically with relation to its preprogrammed 'design solutions'

- iii. to appraise the resulting information, identifying fundamental conceptual structures used in the communicative process; and

- iv. to produce a framework informed by the results of this appraisal and through which the model's communicative structures can be outlined and critically discussed.

As has been stated, news is selected as the practical informational focus of this research, supplying the model's conceptual and critical focus, as well as providing the content through which the model's communicative structures can be indicatively illustrated. This selection will be addressed and discussed within this introduction.

Superficially similar in part to existing 'wire' news feeds - most clearly recognisable in news agencies such as Associated Press and/or Reuters - the model is framed by a need to organise certain types of information as a result of its volume, density and its apparent complexity.

In itself, this research project presents a theoretical model focused primarily upon an investigation, appraisal, presentation and reprocessing of a series of analytical studies. It does, however, have a practical core which runs throughout the thesis. Primarily, the model is indicatively illustrated throughout using examples of news reports and content which have been collated from certain English newspapers.

In this sense therefore, although existing predominantly as a purely theoretical investigation, aspects of the model are presented practically in terms of their existing within the thesis content as explanatory - as opposed to prescriptive - illustrative devices.

Whilst fitting or matching key, clear and widely understood claims for a Ph.D outcome - presenting an appropriately focused, original and informed contribution to knowledge in the context of the selected field of enquiry - the model which I have selected to present the outcomes of my research reflects the inter- or transdisciplinary nature of my enquiries, which I will discuss later in this introduction.

As we have seen, the thesis has certain key aims and objectives upon which it concentrates. Given this focus, it is less concerned with the following four issues:

1. Presentation of a working model

The aims of this research reflect the construction of a hypothetical, as opposed to notionally 'real' model. Due to the nature of this investigation, rather than, for instance, illustrating the design process and building or completing and testing one proposed solution in response to a clearly defined problem, this thesis presents a theoretical framework for a proposed practical solution which is itself based upon explicit theoretical and critical analyses. This investigation is presented with considerable illustrative content, forming a conceptual framework for further development, refinement and practical application. Therefore, a working model or prototype is not included or discussed within this text. Likewise, notions of end-user testing - their results, evaluation and reappraisal - are not addressed.

2. Production of an electronic newspaper

As opposed to what might be understood to be a general definition of the term newspaper: an edition or issue whose content matches certain aesthetic, cultural, political and social criteria(among others), the model presented within this thesis is an attempt to outline a more abstract electronic news 'service', not framed by edition or issue but instead by data flow, information distribution and related communicative structures. Rather then being concerned with an electronic newspaper, therefore, this research concentrates upon aspects of information (or, in this case, news) management and visual communication.

3. Advertising and news' commercial context

As stated, the focus of this research rests solely with certain communicative structures used in the organisation and visualisation of information. Therefore, it is less concerned with issues regarding advertising and the commercial context within which news currently operates. Likewise, no distinction is made between tabloid and broadsheet when discussing the model, although this plays an obvious and important part in the discussion of printed news in chapter three due to their employment of differing forms of communicative structures.

It could be stated that the model being presented in this research does have certain qualities of 'broadsheetness', it being seemingly more formal, strictly or purely news-centred both in terms of form and content. However interesting or worthwhile, this aspect of the model's focus is not developed or discussed within the thesis.

4. Presentation of software specifications

Presenting software specifications for eventual technological resolution is regarded as taking place outside this thesis' remit. This model's designed aesthetic is one primarily concerned with aspects of use or usability within the communicative process rather than fixing a designed 'look and feel'.

Put simply, the model presenting this research - whilst centring on a definite visual communication problem - aims to present as its outcome the solution's theoretical framework, as opposed to a particular artefact or notionally complete design solution. I believe this thesis model to be a viable means of presenting this design research, since key aspects of problem solving are addressed through a series of analyses whose focus are fundamental and clearly identified issues associated with the proposed problem.

I have earlier informally referred to this framework for the thesis as 'informed design' (itself a term I claim no fundamental ownership of or, in a broader sense, attribute any real value to since all design could or perhaps should be considered to be informed). What I do mean by this term is a design whose practice and practical form or aesthetic is clearly and explicitly linked through to theory: one where practical development and investigation takes place within a clearly outlined theoretical framework. The work is not a design project presented on paper and its form of explication and theoretical discussion makes this clear.

The clearly outlined theoretical context within which this research exists is itself transdisciplinary. This thesis therefore makes reference to and use of knowledge and information from a range of specific disciplines. Whilst predominantly concerned with issues centring around news, media and communication studies and their intersection with visual communication and information design, this thesis can also be seen to cross-reference such disciplines as language and linguistic studies, hypermedia and literary studies, aspects of sociology and politics.

It is at this point of intersection that the model emerges insomuch as aspects of the model address or are informed by certain issues drawn from distinct disciplines. From this overlapping a claim for this research's original contribution to discourse can emerge; this practical synthesis takes place in a strong, focused theoretical and critical context. The notion of the original contribution made to knowledge within this thesis is clarified and discussed within the conclusion.

1.2 The nomination of news

There are certain specific reasons for selecting and using news as the practical, informational focus for this research. Primarily, news is a mature, dynamic system of information processing, classification and redistribution; a barometer by which change in all its forms is measured. Considered as a form of information dissemination, news can be compared to other forms of knowledge management: specifically any notional or conceptual database or matrix driven system; one that has an inherent conceptual 'hypertext' or pattern of associated links and connections which can be considered an essential aspect of both their content and structure.

The nature of structured repetition is built into news; with signals or editions programmed into regular schedules. Alongside this, the notion of periodicity; that is the commodification of information according to temporal obsolescence (Somerville 1996, p.4) frames news as a form of content processing with a heavy turnover of information. Somerville, describing news' cultural dynamics sets certain parameters concerning news which can be regarded as sharing commonality with other forms of dynamic digital communication and which I will now outline.

Firstly; there are recognised definitions of content; a replacement and obsolescence of this content; a cultural redefinition of content (everything can become news, news as a 'special' form of information) and that there are certain social hierarchies of content (pertaining to what is excluded).

Somerville suggests (p.8) that this content:

- contains 'forward spin' (pressing forward to the next edition)
- pushes for change, in order to maintain coherence in terms of content
- contains excitement
- is factual
- is framed by regularity in terms of its scheduling
- is political (small p)
- highlights conflict
- is anonymous yet is framed within organisational structures
- is value-based
- abstracts aspects of reality through statistical use
- is brief

These parameters help define the conceptual, critical, factual or aesthetic context within which it could be said that news exists. They can be extrapolated towards a broader framework within which it is possible to discuss aspects of news, whilst recognising that this discussion is taking place within a more generalised - albeit still focused - model or system of information dissemination and/or knowledge management.

News is the field of enquiry for this research yet it is fully acknowledged that it is being used as an area for testing the model's theoretical potential. As mentioned, the research presented could be applied to a range of practical solutions whose content matches some or all of those criteria described by Somerville above. These solutions - whose content could range from the works of Shakespeare to thesaurial information to museum exhibits and their cultural contexts - are no more or less viable in terms of how their content can be applied to the model's communicative structures.

News is, however, rich in critical and cultural content; is relatively free both in terms of access and value; is rooted within concepts of time and a dynamic sense of change, and as such is judged as a more than worthwhile focus for this research.

1.3 Spatial metaphors and news-as-sound

The development of systems or technologies of information storage and dissemination - in particular information-as-news - can be considered relatively straightforward. Three socially significant technological shifts - from print, to television, to the Web - are reflected in respective technologies of news consumption. This thesis signals a conceptual development from current systems of electronic communication towards one centring on the notion of information inhabiting a seemingly limitless space. The web hints towards a geospatial or territorial or environmental information space through which users may move - one which this thesis extends although it's formal systems of visual communication seem to recall the printed page.

A spatial metaphor has seemingly gained greater attention as issues concerning the relationship between electronic information and physical - or virtual - geographies, and systems for navigating electronic information have been suggested, and the notion of information uncoupling its physical moorings has grown.

Complementing the emergence of a spatial metaphor to both help users understand and to explain interaction design, Bolter's (1991) thesis concerning conceptual 'writing spaces' associated with technologies of visual communication can be extended and applied to systems and technologies of news communication. It can be noted here that only those technologies of news communication that in Bolter's terminology exist upon a hard structure (p.41), that is on or in a physical surface, were regarded as being significant to this research.

News-as-sound can and perhaps should be regarded as important, since in solely quantitive terms a significant amount is broadcast. With the ongoing development of electronic communications technology - with its convergent and absorbent nature - sound is becoming a channel of communication which the communication designer is becoming faced with with greater frequency. However, within this research sound is not studied exclusively but rather as an aspect of the news text; as commentary and narrative.

1.4 Overview of the thesis

Primarily, this thesis is empirical and analytical in terms of its methodological approach. It is clearly divided into two distinct parts with a bridging chapter acting as a focused linking mechanism. The first part is concerned with empirical review; the second with analytical discussion of the model's key communicative structures.

Chapter two, is itself split into two sections: the first reviews key literature, focused specifically on defining and discussing news alongside a range of related issues. Chapter two, section two outlines the research's theoretical and conceptual framework both through a continuation of the review of key sources in the field whilst identifying and discussing key concepts, and outlines a linguistic framework through which these concepts can be examined and applied to later analyses. Chapter three contains focused analyses of three forms of news communication - print, television and news on the web - wherein key communicative structures (hard, soft and

firm) are identified and appraised.

Chapter four is, as mentioned earlier, the bridging or link chapter between parts one and two. It presents the results of the previous analyses and establishes and develops the critical and conceptual patterns between them. It ends with an outline of six issues or questions raised by the analysis forming the model's framework and which is discussed in detail in part two.

Chapter five, therefore, is separated into six sections, each critically examining one particular issue. Briefly, these aspects being discussed are: the n-space model's spatial paradigm; the use of spatial organisation to signal informational hierarchies; the visualisation of dynamic news flow; the explicit signalling of hierarchical, hyperlinked structures and information networks; the redefinition of the columnar communicative structure within the model; and, finally, the processing of user interaction. Each is heavily illustrated with the use of indicative images, presenting each issue in a practical, visual context.

2 Review/outline

2.1 Introduction

This chapter serves two distinct aims or functions, presented with one intention. To frame the forthcoming set of news analyses, it is necessary to outline a theoretical framework whose aim it is to contextualise this study. Therefore, I combine a review of the literature with the development of a conceptual outline.

This research is concerned primarily with points of intersection. This concept of connexion (those points where intersection occurs) - and, therefore, connectivity (the ability or potential for intersection to occur) - is a thread running throughout this thesis; in terms of - amongst others - its area of study, its theoretical analysis and/or its integral yet underlying approach to the relationship between practice and theory.

Taken on the most general level, using the most broad of terms, this thesis explores one aspect of the relationship between design - the deliberate imposition of a primarily aesthetic-centred order - and news - the thing we understand to be new, or recent, published reports of events. News - or information - and design - or language - intersect on the most subtle of levels; in most cases news might rightly be said to be un- or under-designed. Yet taken in a wider sense, news is certainly ordered: with a clear structure and framework of both visual and verbal codes of social and cultural and political and aesthetic communication. When technological change forces a paradigm shift upon systems of news dissemination and production, then its systems of visual and verbal communication must follow suit.

As has been inherently recognised, within this simplistic framework lie finer structures and more capacity for refinement. Two more key points of intersection can be introduced and their intersections mapped. They are: communication and technology. Both news and design can be said to be communicative processes displaying the recognised form of producer/consumer; sender/receiver; writer/reader; entertainer/audience. Both are also technological processes, in terms of their technical processing, production and consumption. Again, importantly, both are tightly linked to another intersection: their emergence and development depend on what we can call technologies of communication, or communications technologies; or, extending the terminology, language technologies or language machines.

It is this development of human language technologies which marks the particular importance and current relevance of the first noted intersection; of news and design. Current technological change alters all aspects of society. Connexions along and among the news and technology and design and communication matrix can be mapped and recorded, in terms of history, theory and practice.

2.2 News: its role and function

The role and function of the newspaper arcs across society, culture, politics, entertainment etc. as a reasonably flexible system for broadband information storage and dissemination. Published in editions daily (and often, in a number of editions in one morning), weekly, fortnightly, monthly or possibly bimonthly (although this might seem to contradict our notions of news necessarily being 'new'), newspapers package reported information for public consumption. This act of codification transforms 'information' into 'news' through a process of selection, reporting, editing, visualisation and eventual publication.

A newspaper has come to mean a weekly or daily publication consisting of folded sheets of newsprint, an inexpensive wood-pulp paper, and containing articles on current events or information about such events. Much of the content, news reports etc, have been collected by a news agency, and once printed, the publication is distributed by a network, largely controlled and owned by newspaper proprietors, for sale through a news agent. (Elliman 1994)

MacGregor (1997) regards news - and therefore newspapers - as having an essential democratic function; '(n)ews is one of the starting points of the public information equation, providing an essential forum for an informed citizenry in a democratic society with the routine electoral process and long-term democratic evolution of the contemporary world depending in part, on healthy, properly functioning news media.' (p. 44) Schudson (1995) too believes news is set within political democracy, functioning most effectively when most open to public criticism. (p. 3) News, according, to Schudson is public knowledge: a distinct form of culture. Herman and Chomsky (1994) argue that news has a specific political function; that is, to serve the ruling political elite. They argue that a truly free, open and democratic press is impossible within the political and economic constraints of their 'propaganda model'. (p. xi)

Somerville (1996) highlights a key economic function of news; to be new, but not to stay new. News has inbuilt 'periodicity' - a terminator gene or planned obsolescence; a shelf life of usually one day - without which it would be impossible for news to function as a product and as part of the news-industry. (p. 4) This periodicity - the regular daily transmission - serves two other economic functions. First, it creates a decontextualised, digestible, scaled-down fragment. News - as opposed to information - has been processed; it becomes, as Schudson (1996) agrees, a 'composite, shared, ordered,and edited product.' (p. 2) Second, this fragment is one part of a seemingly endless chain or series of fragments, the result being a form of addiction to being part of this sequential process: not for nothing are some known as 'news-junkies'.

News is manufactured or composed: a commodity or product. (Hartley 1993; Fowler 1991) Ideologically, journalists attribute the production of news to their objectivity in reporting the events as they see them. Some researchers claim the opposite; that news - and news-values (those factors that somehow judge news-worthiness) - are the product of a specific series of subjective filters. And these filters it is argued serve a distinct political economy: the ruling capitalist class and associated special interests. (Herman and Chomsky 1994; Glasgow University Media Group 1976) These findings do, however, have their critics. Harrison (1985) refutes the argument that news is biased against one particular social class. (p. 44)

Whilst not primarily being concerned with arguments concerning whether or not media bias exists and to what ends, this research engages with notions of selection and choice and the value attributed to information by this action. News is self-defining: 'news' (the thing, the product or form) is news (what's new, the event or content) and this content depends almost entirely upon its meeting a predefined value of news-worthiness. As we shall see, the notions of selection and value are to be challenged by technological change.

Values responsible for the manufacture of news most certainly exist. Hartley (1993) specifies six 'preoccupations' of news: politics; the economy; foreign affairs; domestic news; occasional stories; and sport, and even suggests five more whilst pointing out the paradox that "...news is supposed to be about new and unexpected things..." (p. 38) Whilst it is agreed among news-workers and news-researchers that news-values are put to use, their exact definition remains unclear.

Schudson (1989) rejects what is termed 'the gatekeeper model'; the notion that journalists or editors (news-workers) determine news-content based upon 'their own set of experiences, attitudes and expectations' and that the communication of news is 'highly subjective'. (White 1950, quoted in Schudson 1989) All reporting, and in fact all perception, is mediated, according to Kress (1983), leaving no room for the ideal of objectivity. We therefore rely upon theoretical schemata in order to attain clarity of perception. (p. 121) Likewise, Fowler (1991), points out that "(T)he news media select events for reporting according to a complex set of criteria of newsworthiness; so news is not simply that which happens, but that which can be regarded and presented as newsworthy." (p. 13)

These news values "...are said to perform a 'gatekeeping' role, filtering and restricting news input...", and their origins "...are complex and diverse: they include general values about society such as 'consensus' and 'hierarchy'; journalistic conventions; nature of sources; publication frequency and schedule; and so on." (ibid.) Herman and Chomsky (1994) specify five gatekeeping filters as forming their noted 'propaganda model'. Their model is - as has been noted - critical of the political economy of news as they see it. Their filters are particularly pernicious, controlling and restricting a newspaper's output, therefore controlling one system for communicating information to the public. 'The raw materials of news must pass through successive filters, leaving only the cleaned residue fit to print.' (p. 2) Like Kress (1983) and Hall (1970), Herman and Chomsky regard news-workers claims to objectivity as somewhat self-deluding since the constraints within their model are embedded so deeply.

Harrison (1985) asserts that news-values cannot be defined due to the ever-changing nature of news itself. '...(T)hese perceptions are perhaps best seen as fluid, changing, and constantly influenced by wider changes in social attitudes, rather than uniform, static, or peculiar to the professional world of journalism.' (p. 44) Golding and Eliot (1979) acknowledge a mystique surrounding news-values, regarding them importantly as working or professional rules, as aids in the selection and prioritisation of reports, and as the means by which news can be defined. (p. 114)

Schudson goes on to define news according to three distinct approaches: news as 'system-maintaining', its outcome related to a specific political economy (p. 267), as discussed above ; news dependent upon the 'social organisation of newswork', upon interaction between reporters and bureaucratic officials and reporters and editors, and a resultant socialisation into the values, routines and rituals of organised journalism (p. 273); and news as a cultural construct, determined by 'broad cultural symbol systems.' (p. 266) Each of these approaches recognises the existence of so-called news-values, locating them in three distinct systems but loading these values with political, social or cultural bias.

Famously, Galtung and Ruge (1973) have outlined a thorough set of 'criterial factors' as a schema for the definition of news-worthiness. Like Schudson (1989), Galtung and Ruge attribute a great deal to a number of cultural factors against which news can be defined. Whitaker (1981) disagrees, asserting that "...News, by its nature, cannot be defined...because the circumstances governing the selection (of events) are never constant..." (p. 23) He goes on to analyse the process 'by which events are transformed into news', highlighting the event coming to the attention of journalist or 'gatekeeper'; the assessment and selection of the event in terms of its 'newsworthiness'; preparation of the story whilst taking into account certain practicalities such as: time available and the feasibility of fact-checking; internal constrains such as the newspaper's editorial policy; external constraints, primarily the law; and the newspaper's printing and distribution. (ibid.) Rather than a pre-set series of values, Whitaker prefers to believe in more concrete, practical 'filters' to any informational transformation.

MacGregor (1997), acknowledging the seemingly confused and confusing nature of the study of complex theories of news production and assessing news-value, goes on to summarise 'five influences on media content': social reality; news-workers socialisation and attitudes; organisational routine; wider social institutions and forces; and ideological position and the maintenance of the status quo. '(A) jigsaw of truth...needs to be assembled'. (p. 82) MacGregor's excellent, thorough overview and admission that no one theory can possibly satisfy all news-workers and news-researchers, like Whitaker (1981) and Harrison (1983), serves to remind us that news itself is never fixed, always fluid and - like its partner in this study, design - is seemingly at the mercy of technological change.

2.3 News and technology

As we have seen, news-values - and theories associated with information selection and its attendant news-worthiness - proliferate. Whether ideological, or cultural, or social, or organisational, or political, decisions are made in the news-process regarding certain qualities of information. These decisions influence - or directly effect - the content of any news transmission. With current changes in the technologies of news production and dissemination, subsequent effects on both 'news' (as form) and news (as content) have been foretold or often wholeheartedly promised.

Chief amongst these promises is that of choice. In terms of interactivity, user-choice allows greater decision-making in terms of how information is navigated. Where electronic news is

concerned, choice and selection are factored in from the very beginning. Leonard (1997) outlines possible uses and current usage of 'bots', software algorithms guided by defined rules of behaviour. (p. 7)

It is these 'bots', acting on our behalf, which will select our news according to our preformatted templates. Given the current 'data smog', and the associated difficulties coping with the current rush of information, our bots - it is promised - will become our own gatekeepers, filtering out what we know we won't want to see/hear/read and presenting that we have asked for.

2.4 News and technological change

> "...the English sign (word) news is historically recent, being common only after 1500 with the invention of printing. The older English term is tidings. In the OED the two terms are used to define each other, but in historical examples the earliest use of news all seem to refer to written 'tidings'. In other words...a technological distinction exists between (oral) tidings and (literate) news." (Hartley 1993, p. 18)

As Hartley argues, what we now think of or define as news resulted from a specific technological shift: that from the spoken to the written or printed - literate - word. The word itself - the name given to the 'report of recent event or occurrences, brought or coming to one as new information' (OED) - was redefined in light of a new means of reporting that event. 'News' was created in conjunction with, and as a result of, the development of a new language technology and the subsequent creation of what Bolter calls a new 'hard structure': namely, the page. The development of printing, as Ong (1993) notes "...locks words into position in this (visual) space..." (p. 121), reinforcing the communicative supremacy of the word, as it shifts towards a newly created writing space, and consequently its related n-space.

A redefinition of the word 'news' continues as the technologies of information/news dissemination continue to develop. Current methods of electronic information transfer, and their related systems of gathering and reporting news, close the gap between the event and its news report. The technological capability to transmit news as it happens, as seen in the 'rolling news' service of CNN and the potential for continuously updated news is comparable with the shift in technology which forced the updating of 'tidings' to 'news' half a century ago. Again the word and its meaning are changed, "...the term news is being upgraded to accommodate the idea of 'newness', as news itself moves up into a faster environment." (Elliman 1994)

2.5 Design and news

Design is "...the structure and form of a thing...(it is) about the organising of materials and the accessing of information, but it's also about the commodification of both these things. Even the smallest design solution is weighed by this basic ethical charge." (Elliman 1994) The importance of the relationship between design and news is recognised by Evans (1973). Design is "...an

integral part of (the) process for...transmitting news and ideas...(it) is not decoration. It is communication." (Evans 1973, p. 1) With this definition, design is wholly tied to the process of communication, working to close the gap between form and content. Elliman's definition places design firmly between producer and consumer, as an active social force in the process of shaping and preparing news for consumption. Finberg and Itule (1990) consider design to be the means by which the content of a news signal is kept orderly and under control, a process through which information is somehow restrained or regulated in order to communicate. Salomon (1990) argues that design is responsible for 'uniqueness in media', that their "...essential differences...(are) their modes of gathering, packaging and presenting information, that is: their symbol systems...their modes of presentation." (p. 252)

Design's role in the dissemination of news is therefore one of structuring, forming, controlling and communicating: of creating and framing society's view of events, society, reality. "Communicative power is about the about the right to define and demarcate situations...the power to typify, transmit, and define the 'normal', to set agendas." (Glasgow University Media Group 1976, p. 13) The power of communication is therefore linked to the process of communicating: to design.

Design or the process of designing might - within the theoretical context of this text - be considered to be the origination and application of firm structures; the 'organising of materials' in order to communicate information via a specific n-space's hard structure. Firm structures, through their use of soft structures, "...establish and maintain links between any...units of information." (Bolter 1991, p. 43) Design creates a structure, forming a network of links through which information is controlled and communicated: producing meaning. Within news discourse, "...meaning is the product of interaction...news means nothing at the time it is broadcast or printed." (Hartley 1993, p. 36) As previously discussed, an item's meaning is a product of this social context, arrived at or received through a predetermined set of links or pathways: through specific firm structures.

2.6 News signals

Current methods of news dissemination, commonly identified as newspapers, television news, news on radio and the emergent medium of electronic delivery, primarily via the web, can be regarded as being concerned with the transmission of news signals. These signals might be a daily or evening newspaper, regular broadcast television or radio bulletins, email or website editions or communications to mobile telephone or palmtop receiver.

News signals make news available; repackaging information according to systems or sets of rules of both visual and verbal organisation and presentation. These systems are signal-specific insofar as being defined according to predetermined, self-contained or self-referential terms decided by those who we might regard as 'signal-makers': publishers, editors, journalists, art directors, typographers, equipment operators etc.

2.61 News signals: time and space

If discussed in terms of time and space, news signals can be compared with certain similarities and differences becoming apparent. Gelb (1980) discusses systems of communication as either sequential/non-sequential (those played out/communicated in space) or momentary/stable or recorded systems (those communicated/played out in time). Gelb asserts that oral language and the phonographic stage of writing determine the sequential order of elements being communicated, and "...the non-sequential order is found mainly in pre- and proto-stages of writing and para- or meta- devices of writing..." (p. 9) for example primitive attempts at visual communication, non-representational diagrams or systems of mathematical or scientific notation.

Television and radio news signals, therefore, are sequential or momentary systems of communication. Newspapers are non-sequential or mosaic/stable or recorded systems. Current web news signals could be regarded as bridging a gap between these standpoints, operating as momentary fragments of a larger stable system.

In the case of news signals, sequential/momentary systems might seem restricted when compared to non-sequential/stable systems. A television news signal is ephemeral and transitory. It is transmitted and it disappears. The only possibility of it returning lies through repetition, either by recording (capture) or if it were part of another signal.

Sequential/momentary systems might also seem restricted or limited spatially since, as in the example of television, effective communication can only take place when the viewer/user is in close physical proximity to a signal-receiver (TV set). "Only visual systems based on the use of objects...or markings on objects are not restricted by the bounds of time and space and serve the purpose of stable communication or recording." (Gelb, p. 9)

2.7 News spaces

Space is defined as the 'continuous expanse in which things exist and move; (the) amount of this taken by (a) particular thing or available for (a) purpose.' A 'news space' can, or perhaps should, therefore be defined with reference to its abstract 'spatiality': as the continuous expanse in which certain elements exist, meet and act upon each other to communicate and present a news item or story for consumption by a 'news-user'.

Those elements existing in the news-space (from now referred to as n-space) could be - in the simplest terms - information selected for dissemination and its specific verbal or visual presentation system. Information communicated through an n-space exists seemingly frozen in a vacuum of meaning-potential until a reader/viewer/user interprets and contextualises it. Within its distinct n-space, a news signal could be regarded as possessing a multitude of potential connotations, contexts or meanings. An individual's response to this information (the act of reading) fixes (however temporarily) a meaning.

The process by which certain types of information are selected, framed and therefore understood to be news - with reference to criterion of news-worthiness and associated news values - are discussed in Galtung and Ruge (1973). Such filters being part of the selection and production processes obviously go some way to influence, limit or extend a news item's possible meaning-potential.

2.8 Writing spaces and n(ews)-spaces

Bolter (1991) defines a writing space as "...the physical and visual field defined by a particular technology of writing." (p. 11) N-spaces can also be defined by their specific technologies of visual or verbal communication: their specific language technology. The development of a means by which information could be stored and disseminated - writing, printing and newer forms of electronic communication - alongside systems for the recording and transmission of both the spoken word and moving image have created spaces in which information - as news - can proliferate. "Each technology gives us a different space." (Bolter 1991, p. 11) N-spaces, therefore, were and still are defined and dependent upon specific writing spaces.

The development of writing shifted our means of communicating from an oral to a visual space. Later, printing "...embedded the word in space more definitively..." (Ong 1993, p. 123), pushing it further into typographical space, into the white space of the page. The development of new language technologies create new conceptual spaces, fostering numerous, differing sets of conceptual understandings and new relationships which explore the potential for emerging dialogues between writer, reader and the writing spaces. (See Bolter 1991, pp. 10-11 and 85-88) The consequences of the shift to a printed visual/writing space, and the way print has affected human consciousness has been investigated and reported. (Ong 1993, Mcluhan 1962 and Steiner 1967)

2.9 Communicative codes within a n-space

N-spaces utilise and exploit numerous and varying communicative codes - or codes of meaning - in the presentation of news items within news signals. Certain specific verbal and visual codes, strategies or structures codify a news item, communicating both the item's content and what could be termed meta-information: the item's news value, for instance.

Within the structured, communicative composition of these codes - across different language technologies, writing spaces and n-spaces - there exists both a shared common purpose and common points of reference. Printed text on the page in headline form can share content and intention to that spoken by the news-reader in television news. Both rely on a brief verbal statement - written or spoken - with its importance stressed in a particular way: either in terms of weight and size of type or vocally to convey specific information regarding its status and importance within the signal's structure.

2.10 Hard and soft structures

Any n-space can be examined in terms of its hard and soft structures. Bolter (1991) defines a hard structure as the "...tangible qualities of the materials of writing...", its physical manifestation and presence, and soft structures as "...those visually determined units and relationships that are written on or in the hard structures." (p. 41) As recognised, technological shifts - and subsequent development of new language technologies - create new writing spaces, new hard and soft structures and with that, new systems of news dissemination and presentation: new n-spaces.

Bolter utilises the example of a book. Its hard structure is defined by the physical characteristics of its associated language technology: printing. Print's hard structure is primarily recognised to be the page, a book's individual communicative unit but can be extended to include the book itself, as an object and artifact. A book's hard structure determines its physical, sequential nature alongside any inherent benefits or limitations associated with linear narrative and our role as the reader in this process. Within this writing space, both physical and conceptual, any discourse can take place.

In terms of a book's soft structures, Bolter's definition or description acknowledges the range of visual units - and their forms of relationships - which can be on or in its page(s). From a single letter, through words and sentences to complex systems such as indices and forms of notation, soft structures are communicative elements primarily concerned with an artifact's content. In terms of a widened scope of language technologies, soft structures can and are often detached from their associated hard structure: most notably with regard to speech on television, radio or the web.

The notions of hard and soft structures can be expanded. If, as outlined, we consider current methods of news dissemination as secondary technologies brought about by the creation of new writing spaces via new language technologies then identifiable variations of hard and soft structures emerge.

N-spaces are seemingly determined and defined by their respective hard structures or their physical spaces; their medium if we take its definition as the agency or means through which news (information) is disseminated and presented. The screen or the page are constants and seemingly fixed, while it appears that all which is presented on, in or through them constantly changes. Consequently, developments in forms and display technologies associated with information technology have a direct influence and effect on news technology, both in terms of presentation and dissemination.

Soft structures by their nature are plastic, transparent and malleable. They appear to yield to change and are capable of being moulded. Through application and repeated use upon a specific hard structure and with specific intent - and as opposed to remaining individual or separate forms of and for organisation and visualisation - they become recognised, purposeful systems.

2.11 Firm structures

These systems - reconfiguring Bolter's terminology - I call firm structures. Firm structures are assemblages: sets or networks of connected or collected soft structures organised into patterns, whose underlying form can range from simple to complex. Tufte (1990) discusses the capacity within visual communication for the reader/viewer to move 'up' or 'down' rungs or levels of information, gaining varying degrees of data in either the ascent or the descent. This he calls micro/macro reading (p. 37). The concept of firm structures can be further refined and discussed with reference to Tufte's discussion into what I have termed micro and macro firm structures.

Micro firm structures (Mi FS)

Put simply, micro firm structures are individual assemblages or configurations of soft structures used in the communication, organisation and visualisation of one news item. They are local, relating to one story specifically - most often an item of lower priority - and present that item to the reader/viewer/user in an often straightforward or simplistic pattern.

Macro firm structures (Ma FS)

Macro firm structures are, in terms of their organisation, fragmented and therefore more complex. Whereas Mi FS sets can be regarded as local, Ma FS are global and can be seen to relate to a number of iterative structural units from the item or story towards a news signal itself being regarded as one distinct macro firm structure.

Within this text I refer to four distinct levels, forms or systems of Ma FS: story, section, signal and structure.

story

relates specifically to high priority news items. This Ma FS is an item, fragmented for the purpose of attempting to address its complexity through a series of focused satellite items; a collection of Mi FS sets, formed into a constellation of sub-items, each of which relates directly - or possibly indirectly - to the item being presented

section

is concerned primarily with the organisation of news items related to a shared subject matter. This thematic Ma FS is often a distinct area within a news signal, framed through the use of signage or titling in order to communicate its themed content to the reader/viewer/user. A range of prioritised items can be communicated within this Ma FS.

signal

is specifically associated with the organisation and arrangement of items within the pre-defined length of the news signal. In the case of this Ma FS, the signal is generally regarded as being finite since the placement of an item at any point within the space or time of it could resonate with communicative potential.

structure
refers directly to the notion of a signal's hard structure, as discussed above. This Ma FS is concerned with the hard structure - either page or screen - being used as a discrete, significant structural unit in the communication of news, perhaps collecting numbers of Mi FS to be viewed as a 'front page'.

2.12 Firm structures as grammar

"What languages do is enable us to communicate information...by establishing systems and rules that people learn...(a) language is a social institution, made up of rules and conventions that have been systematised, that enable us to speak (or...communicate). (Asa Berger 1990, p. 138)

In terms of news dissemination, the recognition of both micro and macro firm structure acknowledges the existence of a grammar: the systematised rules and conventions of a form of language, of a social institution that enables news to be communicated through a particular language technology.

Firm structures may be considered unique methods for the organisation and presentation of information. As recognised, they are methods of representation which can become conventions or the customary practices of how things might look and/or sound, or how we expect them to look and/or sound.

Our expectations of newspaper design, for instance, reflect one of many solutions - possibly the most satisfactory - of the particular creative problem of communicating news via the printed word. With the establishment of a specific visual grammar, however, these rules tend to remain fixed and are not liable to change.

Expectations can be broken, however. Conventions are set only through their repeated use, and often, in order to make a specific point, these conventions are temporarily frozen: a firm structure can be subverted, ignored or smashed to communicate certain information above or beyond the news signal's content. These actions, however, can only take place following the reader/viewer/user's internalisation of a particular grammar.

2.13 The cliche

With the establishment of such a grammar and the emergence of reader/viewer/user expectation with regard to systematised convention, it could therefore be recognised that such solutions were a form of communicative cliche. Such cliches can be identified in all forms of news dissemination; each firm structure can possess an equivalent which serves the same, or at least something close to the same function.

A cliche is defined as a 'hackneyed phrase or opinion', implying a negative aspect 'made common or trite through repetition'. This definition seems to criticise the cliche by considering its

meaning to be exhausted through over-use. In news presentation, cliches cannot be seen in wholly negative terms since they offer a reassurance to the viewer/reader; that the n-space is a common one, where the reader/viewer is not battling against new, unknown visual or verbal codes which offer nothing but a sense of loss amongst unfriendly design.

The sense of exhaustion of meaning that is commonly associated with the cliche can be identified with certain aspects of news and its presentation. Much criticism is made of news in its reduction of information to a set of easily digestible or recognisable elements within the space. The spoken 'soundbite' is one such linguistic example where the distillation of issues or views into a cut-up of short sentences is an attempt to divine a simplified meaning from more complex sources. Cumings (1992) explains that twice he was interviewed for television (by NBC, then CNN) in 1989 and 1990 respectively. He was interviewed for forty five and thirty minutes, from which were used ten seconds and six seconds.

> "It is an odd feeling, to know that a long, interactive interview will be cut without the slightest concern for whether it renders your views accurately: a quoting-out-of-context which would not meet the basic principles of print journalism...it is the fate of TV experts to be soundbitten... authors of their own thoughts, they are not responsible and not accountable for how television uses them." (p. 41)

Offering a criticism of television news - that it reduces a dialogue (the interview) to what appears to be a monologue (deliberately excised fragment whose meaning is defined by its position in the 'flow' of juxtapositions), Cumings makes the direct comparison with printed news; that one type of news signal possesses a greater control over what it uses in the signal.

Both television and printed news lack the interactivity that Cumings attributes to a spoken conversation; the choice of word that is so often associated with electronic communications, whether it is multimedia presentations or links between elements on the World Wide Web. However, electronic communication is not directly comparable to spoken communication. All news spaces are finite; they are deliberate constructions (as are our conversations; constructed from our vocabularies, our grammar and knowledge of human or social behaviour), elements are positioned in the space for specific purposes - whether they are items on the page, or in the linear progression of a television signal, or the intentional fixing of meaning to elements in electronic space; a number of deliberate paths or channels through the news.

Cliches related to a news signal's content have been analysed and reported (see Glasgow University Media Group 1976 and 1980). As is seen in criticisms of news' linguistic manipulation, the claims related to news' - and in particular television news - seemingly reductionist habits with regards to presenting a transparent, objective reflection of events have been made (Cumings pp. 19-27). As was apparent in the previous dictionary definition, the cliche is presented as being wholly negative; the repetition of news's bad habits results in ingrained and unwholesome cliches, unrecognised by those who consume them.

The charge of meaning-exhaustion against the cliche is apparent throughout popular culture. Words, actions or visual signals, once considered new or shocking - or shocking because of their

newness - become jaded through repetition. Since we grow so accustomed to seeing or hearing something, its meaning seems exhausted and we are almost no longer aware of it.

This opacity of meaning, similar to the transparency of technology outlined by Michael Heim (Heim 1987 , p. 6) is seemingly unavoidable, yet not necessarily and wholly negative. The hackneyed cliche, as seen in various news signals, is often welcomed despite, or perhaps because, its meaning is - in a positive sense - exhausted .

A cliche's meaning is so widely known that it is seemingly transparent, nothing appears hidden from the viewer/reader and this reassures. Nothing new or unknown is presented in printed news or television, the cliche is reaffirmed in its continuance. A mutual dependence exists between the reader and the cliche. A reader/viewer/user relies upon a cliche for a confirmation of surroundings and the cliche's continued use relies upon this sense of comfort. Although the cliche's meaning appears to be widely known, as Asa Berger (1990, p. 136) points out, these 'structured associations' are recognised without conscious identification, so an ignorance of the cliche and its effects is perhaps more likely than a positive or negative reaction or recognition.

2.14 Summary

To summarise, the literature review and theoretical analysis which have taken place in this chapter have developed a conceptual framework which will be appled to three forms of news communication: printed news, television news and news on the Web.

In particular, each news-form will be analysed detail in terms of its hard, soft and firm structures, both micro and macro. Communicative cliches in use in each of these n-spaces will also be identified with the intention that their use can be carried over into any potential, informed electronic news transmission.

3 Media analyses

3.1 Introduction

As has been outlined earlier in this text, a theoretical framework can be put into place which enables a study of existing news signals. Through this analysis a pattern might emerge; specifically, shared conceptual communicative codes or systems for the effective communication of news which could be carried over into the design of a new signal. This electronic news transmission would therefore be designed specifically to address certain issues and make use of certain developments - both theoretical and practical - uncovered through the process of analysis.

In order to attempt to understand the role and function of communication design, with specific reference to forms of news transmission, it seems necessary to undertake a focused analysis of their communicative codes. For the purpose of this enquiry, this analysis is restricted to three primary forms of news-signal; specifically newspapers, television news and the emerging signal-system of Web-based news. News on the radio was not included in this review since it has no visual aspect or element to its signal. However, both television news and news-on-the-web include specific - and in the case of television, substantial - spoken content. In these cases both visual and verbal (or, oral) channels and their respective aesthetic are studied.

3.2 Sample

Following earlier, noteworthy media analyses - those undertaken by the Glasgow University Media Group concentrating on content, language and visuals, and Evans' study of the aesthetic of printed news for instance - this study aimed to collect specific samples of news signals (print, television and news on the web) using these as the basis for subsequent discussion.

In the case of printed news, the sample was collected from those published on one day: Wednesday July 15th 1995 and consisted of ten newspapers published in the UK on that morning. The sample for television news was recorded from those broadcast across two days: Tuesday July 4th and Wednesday July 5th 1995 and consisted of eleven news programmes broadcast on the (then) four terrestrial channels, illustrating both 'rolling' (in the form of the 'special' or event programme) and regular 'fixed-point' forms of television news. The sample for web news was taken from websites on two days: Monday 12th, and Tuesday 13th February 1996 and consisted of twelve signals, illustrating the web's development as a means of information transmission, from the corporate sites of CNN and Associated Press to the emerging personalised signals offering varying degrees of personalisation.

Those samples which formed the basis of the studies of printed and television news were noteworthy since that day (or day's) news agenda was dominated by one news item: the resignation and re-election of John Major as leader of the Parliamentary Conservative Party,

respectively. The presumed importance of this news event guaranteed coverage of the same story in each news signal, allowing an opportunity to study the approach, management and treatment of this item both on the page and the screen.

It is recognised that these particular days were extraordinary in terms of the event being reported, and such a day was chosen because the potential for extensive coverage promised a fuller range of methods of reporting and communication than those used on a more normal, 'slower' news day when the lead news item would be less assured. The sample which formed the basis of the study of news on the web was from such a 'slow' news period when no specific event dominated either day's news. Instead a number of news items were regarded as being important enough to be the lead item, although a common set of items were apparent in the sample. As a counterpoint to the two other samples, it was noteworthy since it might illustrate differing forms of treatment and management of news items to that shown in the two other studies.

It should also be noted that the sample for the analysis of web news is located at a specific point in time, during the emergence and development of the web as a medium for information distribution. Technological change is such that since this sample was selected and recorded, a number of newer signals have appeared and the range of communicative techniques available to those signals has advanced as the technology has developed. Therefore, it must be acknowledged that although in some regards this study is limited, it does allow a survey of the fundamental communicative structures to be undertaken.

3.3 Methodology

Each analysis sampled one particular media form of news signal. The intention of each study was to attempt to classify and appraise each signal's sample with regard to six aspects of communication design as detailed earlier in this text. Three fundamental aspects - hard, soft and firm structures - have been identified.

(i) Hard structures are regarded as the signal's materiality or sense of physical presence and concrete characteristics, (ii) soft structures its 'visually determined units' used on the hard structure. Developing the notion of the hard structure, the analysis will study both its physical space and its conceptual space, which I call the conceptual hard structure. The conceptual hard structure of a news signal fosters an understanding of what I have termed its 'news-space', that is an imagined, boundless environment within which the reader/user and the news items interact. Each signal's news-space can be understood with reference to its conceptual hard structure.

The third key aspect of communication design by which each signal is to be discussed is what I have called the (iii) firm structure. These firm structures - expanding Bolter's notion of the soft - are systems, collections, constellations or networks of soft structures, whose systemisation is regarded as being purposeful. In the case of firm structures used or applied to the distinct hard structures of news signals in this analysis, the key purpose is - as Evans (1973) reminds us - clear communication in the service of the transmission of ideas and news. The idiosyncratic

aesthetic identity of those news signals studied in this analysis is to a large extent a result of the firm structures used or applied to their respective hard structures: the firm structure is a key element in the formation of a visual identity across news signals, the mosaic newspaper page for instance.

As has been mentioned, Tufte (1990) discusses micro and macro readings; the facility to 'move' up or down rungs or levels of information gaining and gathering varying degrees of data in either the ascent or descent.

> "The fine texture of exquisite detail leads to personal micro-readings, individual stories about the data...all in (an)...extended context...(D)etail cumulates into larger coherent structures...(S)implicity of reading derives from the context of detailed and complex information properly arranged." (p. 37)

Tufte's phrase 'to clarify, add detail', used in his discussion of micro/macro readings in communication design, is applied in the analysis of news signals, specifically with relation to the use of firm structures.

All firm structures are assembled in order that news signals can transmit or deliver their content in as clear communicative form as possible, in order that reader/users are assured of fixed aesthetic certainties which aid understanding. Certain fundamental firm structures are regarded in a global context; rather than being involved in the *direct* communication or visualisation of a news item, they are more involved in its organisation and could be regarded as being collections of firm structures (collections of collections). These I classify as (iv) macro firm structures. Consequently, a (v) micro firm structure is an individual collection of soft structures used in the communication of one news item, can be considered locally, and is concerned primarily with the visualisation of a news item on the page or the screen. Each sample of news signals will therefore be discussed in terms of their organisational macro- and visualising micro firm structures.

Fundamentally, the network of soft structures which go to make up one or more firm structures is organised. This analysis aims to study this organisation, analysing and comparing these firm structures with the intention of identifying specific soft and firm structures which can be classified as design cliches (the term not used pejoratively in this case). These cliches will then form the basis for a process of appraisal and discussion as their communicative potential is reconstructed and extended into the form of an electronic news signal.

3.4 Hard structures

Printed news

A newspaper's fundamental hard structure - as its name indicates - is the page. (Bolter 1990, p. 41) The physical space of a newspaper as a device of information presentation, processing, storage, and retrieval is defined by its paper-based hard structure. Literally, a 'narrative of space and time' (Tufte 1990) newspapers present their readers with both a physical and conceptual

space in which news items are read, the physical space creating or making manifest a narrative of space concerned with time: news.

A distinction must also be recognised between tabloid and broadsheet newspapers. This distinction is in one aspect, is physical, the former being half the size of the latter. The newspaper's hard structure is one of two set sizes, either - approximately - 380mm x 300mm (tabloid) and 390mm x 600mm (broadsheet).

Another difference is conceptual, being reflected in their content and aesthetic. Opinion might have it that tabloid newspapers are not themselves serious newspapers, since they eschew both the traditional form and content associated with broadsheets. This may be the case, but they continue to be text-based, albeit with a very high visual quotient. Often, tabloids run one item across both pages in the form of a double-page spread which has the result of making that page-unit the same or a similar size to that of the broadsheet.

Different design aesthetics - specifically on the front page - can be identified, based primarily on a sense of visual appeal. Of the newspapers in this study, six are tabloid and five are broadsheet. Whilst the front page of broadsheet newspapers are also designed to be visually appealing, they portray the newspapers hierarchy of stories and signal its content more immediately than a tabloid. Although the newspapers in this study were dominated by one news item, an analysis of the previous day's output - when the result of the leadership contest wasn't known - revealed a disparity between the amount of news stories featured on each front page. The tabloids had an average of two items on their front pages compared to the broadsheets five.

The conceptual space fostered by a newspaper is one that is finite - its hard structure demands it. Specifically, the notion of a beginning and an end to an edition of a newspaper, which will in turn be replaced the following day by another - newer - edition.

> "The physical book has fostered the idea that writing can and should be rounded into finite units of expression..." (Bolter 1990, p. 85)

Its hard structure therefore creates a sense of closure, wherein a conceptual space is determined and defined by its physical space. This permanence contributes to printed information's sense of stability.

Television news

Television - the hardware - defines its hard structure, its communication-space. This technology of communication is the screen. Its physical space varies, a range of formats are commercially available: from 14" to 28" and below and beyond. The hard structure of television news defines or designs its content to a less explicit extent than that of a newspaper. Newspaper pages - both tabloid and broadsheet - are technology or signal-specific; their formats are used very little in other forms of print publishing.

The screen is used more regularly by signals or broadcasts other than those devoted to news, although channels like CNN and Sky News are reclaiming the screen for news alone. Therefore the physical interface or surface of television news is a seemingly objective or impartial means for the receipt of all types of broadcast television.

> "Television provides us with a succession of images on the screen. Usually they are accompanied by words, music or sound." (Hood 1980 p.1)

Television news, therefore, is one aspect or function of a multifaceted system for information delivery or dissemination. The screen is a portal or opening, upon the surface of which images are displayed. As Hood points out, alongside or around this visual space is broadcast a verbal/oral signal: sound, words or music. The conceptual spaces of visual and verbal communication coalesce, converge and mesh during a television news broadcast. Their respective hard structures are fixed into the hardware, at separate points: the screen and the speaker. The screen is finite, its limits are physical. The speaker too is an opening, although its output is more difficult to locate or trace, since it marries with whatever image is being broadcast making itself invisible or unnoticed.

A screen-based hard structure signals none of the sense of closure that a page-based hard structure does, other than those determined by the physical limitations of the screen. It does, however, define

> "...structural units and relationships that are tangible and hard to change." (Bolter 1991 p. 41)

That is, the technology of the television screen is characterised by a sense of strict linearity resulting in an output determined and defined by time rather than space. The screen promotes a sequential impermanence, a fluidity and movement. This movement is echoed also in the shifts contained within a news signal, the activity and motion of the camera and the newscaster, of shifting viewpoint and location as an item is delivered.

Since television news is linear, its techniques for signalling or indicating priority, hierarchy and style are rooted in time: it is - in all examples in the sample - a real-time signal being transmitted live within the strict limits necessitated by a 'stopwatch culture'. (MacGregor 1997 p. 63 quoting Schlesinger 1978)

News on the web

Like television news, news on the Web is viewed, read or navigated via the hard structure of the screen. The monitor display, through which the Web news is viewed can - like the television screen - be of varying sizes, from 14" to 21" or larger. Television screens display moving pictures alongside a spoken soundtrack whereas computer-users often work in silence alongside a display that presents only certain forms of moving images (icons or animations) and rarely moving pictures. The content of the common hard structure that these two media share is markedly different: either television or computer programmes. In much the same way as

television is used, viewing news on the Web is only one aspect of the function or use of a computer; like television screens, computer monitors present a number of different information types in or through their display. Again, the screen presents a seemingly objective vessel or window through which its content can be viewed.

Unlike television, a standard, or commonplace set of digital personal computer hardware specifications has not emerged. Instead, computer technologies are fluid: prices fall, capabilities rise; monitors can be bought with or without speakers depriving the user of a key information source, memory needs upgrading in order to access certain information.

Both image and sound can potentially be accessed via the World Wide Web, although technological constraints limit the use of both moving pictures and real-time sound. Either or both forms of content are being supplied for those with the capabilities of receiving them, and this division - in terms of access to information - must be acknowledged. The lack of standardised hardware - and of access to that hardware - results in a less sophisticated cross-fertilisation between visual and verbal spaces on the Web when compared to television (no running commentaries, for example). However, developments in image compression, and increased speeds of modem and server-side connections have allowed the Web user to view real-time movies with synchronous sound. The quality of both image and sound suffers in comparison to television although it is safe to say, a parity will soon be achieved.

3.5 Conceptual n-spaces

Newspapers: space, the 'news hole'

Space is the prime consideration - for both journalists and designers - within newspapers, it is both a spatial and lexical variable. The 'news hole' is the amount of space or story length given to a journalist to fill with the required news item and can be filled with a range of soft and firm structures. In terms of its concrete or hard structure, as has been discussed above, this space is finite. Limitations are therefore placed upon journalists, whose narratives are installed into the newspaper's physical space.

Space dictates - and restricts - the type of firm structures that can be employed in the visual communication of an item. This limitation is organised editorially by the use of news hierarchies: one news story is considered most important and is given most space to fill with its associated soft structures. Less important items, therefore, have less space, and less potential for a complex firm structure.

Television news: time, and finite linearity

A television news signal is finite and sequential, constituting a number of news items. Each news item itself is often organised into a series of reports, although one news item can be viewed as a single report. (Glasgow University Media Group 1995 p. 107) Recalling newspapers, news hierarchies determine significance: important news items are given more space/time in the signal, and their position in the sequence of items also indicates hierarchy as do soft and firm

structures associated with the item's content.

> "...the significance of items has to be weighted by the amount of time allocated to them, their placing in the bulletin, and the status of those who appear as interviewees." (GUMG 1995 p. 173)

MacGregor (1997 p. 63) agrees,

> "...in television bulletins duration is clearly an indication of news value...(t)he more important a story is deemed to be, the more time it is given in the bulletin running order."

His studies of real-time or rolling news indicate the emergence and development of 'an atomic clock culture' "...with margins even tighter than before, partly the result of advances in technology." (p. 65) A news anchor in his enquiry remarked that television news had "...reached the limits of how fast you can get." (p. 65)

A finite news signal imposes a numeric limitation on the inclusion of items. The Glasgow University Media Group (1995) discuss the 'time defence' (p. 106) made by editors and journalists or 'gatekeepers', in terms of the restrictions on the number of items that can be chosen for a finite, fixed-point bulletin.

> "...the length of the bulletins heavily constrains the number of stories that can be carried and this in turn determines the nature of 'the gate'." (p. 106)

News on the web: movement, screen as page and fragmented linearity

Web news' hard structure does not imply the sense of closure and linearity that the television screen stresses. It does however, continue television's fluidity and movement. The 'viewer' of electronic news - the reader of electronic text - has become accustomed to fluidity and impermanence through the use of hypertext links and subsequent movement through the Web news space. This screen-based movement - and change - is tempered by the permanence and pace associated with the printed word. Printed text - embedded in the white space of the page - possesses no potential for movement, other than that attempted typographically: the reader navigates the static space of the page.

This sense of space is maintained in on-screen Web news where layout reflects its page-based past. However, this past may not be specifically newspapers, or magazines, or even books: the electronic 'page' might reflect the printed page of the book in terms of a static presentation. The Web attempts to recall all these paper-based writing spaces, the newspaper and magazine's fluidity of layout for instance with layout able to be altered by the reader's active selection. A sense of movement and direction is established and reflected through specific on-screen changes.

3.6 Soft structures: printed news

Soft structures in use within newspaper design foster or generate specific conceptual spaces. These visual or verbal elements, "visually (or verbally) determined units and relationships...written on or in the hard structure", flexible, sophisticated and highly evolved "...transform that surface into an articulated writing space." (Bolter 1991, p. 40)

Typography and text

The most important aspect of a newspaper's system of visual communication (Finberg and Itule 1990, p. 26) is typography. In terms of both organisation and visualisation, typography is the key aesthetic factor by which news items are communicated, recognised, located and read in printed news, the majority of this text being body text of news items.

The use of a grid allows information to be structured spatially on the page; it is a visual structure since it is involved with underlying or fundamental or intrinsic concerns such as position and reader-navigation. Typographical soft structures, I consider to be verbal although they have a visual form on the page.

As has been stated, typography - the style or appearance of the printed word - is the most important aspect of newspaper design. Print's fixity creates a conceptual space - along with its hard structure - that print is indelible. Text can be altered - visually - in certain straightforward ways which provide visual cues, signalling a difference. For instance, text can be bold or light, in capitals (although this is rare), italics, its size can be changed, it can be a serif or san serif font. Changes in type size are essential since they signal distinction.

Typography delivers content, highlights prioritisation, assists in navigation, and to a lesser extent, is responsible for signing or naming. Changes in size might signify a beginning, or might aim to catch attention, aiding the reader's navigation of the news space and location of items within it. A series of points, areas or fields on the page are 'raised' (in size) to create points that catch the eye, that stand out against the grey of the page.

Effective typographical solutions, particularly those concerned with the use of columns, break up the visual monotony of the page whilst maintaining effective communication of information.

Typographical soft structures: headline, body and byline

The primarily typographical nature of newspapers leads to a heavily written or textual basis for the delivery of news content. For the sake of this analysis, three soft structures are identified as being fundamental in the process of the communication of news via the hard structure of the page. These are: headline, an aid to navigation and prioritisation; body text or copy, the primary means of information delivery, and byline; the key means for labelling and identifying an item's author.

Headlines

Headlines have an essential responsibility in the reading of an item of news, providing a specific amount of information concerning the news item and prioritisation which enables the reader to make a decision whether or not to continue reading that story. They are effective, efficient and speedy aids to navigation, aids towards being able access information (fig. 3.6.1 - 3.63).

Headlines are the largest textual element in newspapers, generally one line of text which summarises the lead item. Often, tabloid news items can have headlines of greater area than their body text, emphasising the almost slogan-like nature of the headline. Headline size changes as items change, a structure of priorities is communicated by their difference in point size.

Often, headlines are subject to typographical tricks: to reflect the nature of the item, a football might replace the letter 'O' in its headline, for instance (fig. 3.64 - 3.65).

Sub-heads

Secondary textual elements - directly related to the primary headline - are included, adding an extra, supplementary layer of informational detail. Headlines and sub-heads are close both spatially and hierarchically; sub-heads supplementing headlines by being positioned around them. The use of sub-heads within a news item reflects that items position in the hierarchy of news-worthiness, usually with items recognised as being most important (fig. 3.6.6 - 3.6.8).

Bylines

Bylines are the key means of typographically identifying an author responsible for a particular news item. Certain authors within news organisations are identified solely by their position within the organisation: more specifically as a correspondent with responsibility for a specific area of coverage. Again, within a recognised hierarchy of newsworthiness, those items more worthy are usually given this form of author recognition. (fig. 3.6.9 - 3.6.11)

Visual soft structures: photographs

Newspapers include a greater range of visual information than ever in their history, their prime means of direct visual communication being the use of photographs. In terms of frequency and size, a high priority story is more inclined to feature a photographic image, as is a feature story. Colour is used more frequently in tabloid newspapers - both in terms of colour photographs and as an aesthetic rule - with large photographs often taking up a lot of the space upon a page.

Perhaps as a result of an indirect influence from television news, this study revealed a heavily visual leaning throughout all newspapers towards photographs as primary visual elements. Each front page contained a large photograph or illustration. In the sample, there was evidence of what MacGregor (1997) calls a 'picture cluster', where

> "...two or more competing...crews are present at the same scene, both recording it from only slightly different positions. Often film crews appear in each other's material as camera operators all crowd round the same detail. This 'hunting in packs' is common at normal times in...domestic newsgathering...Some material inevitably has the same

fig. 3.6.1: The Guardian, headline

fig. 3.6.2: Daily Mail, headline

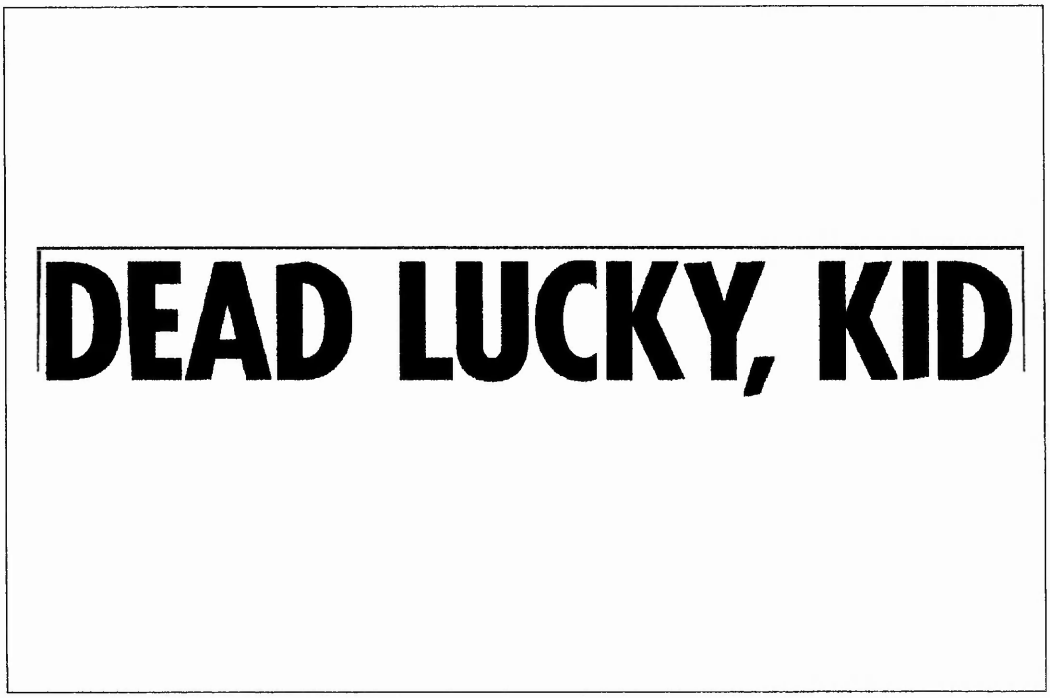


fig. 3.6.3: Sun, headline

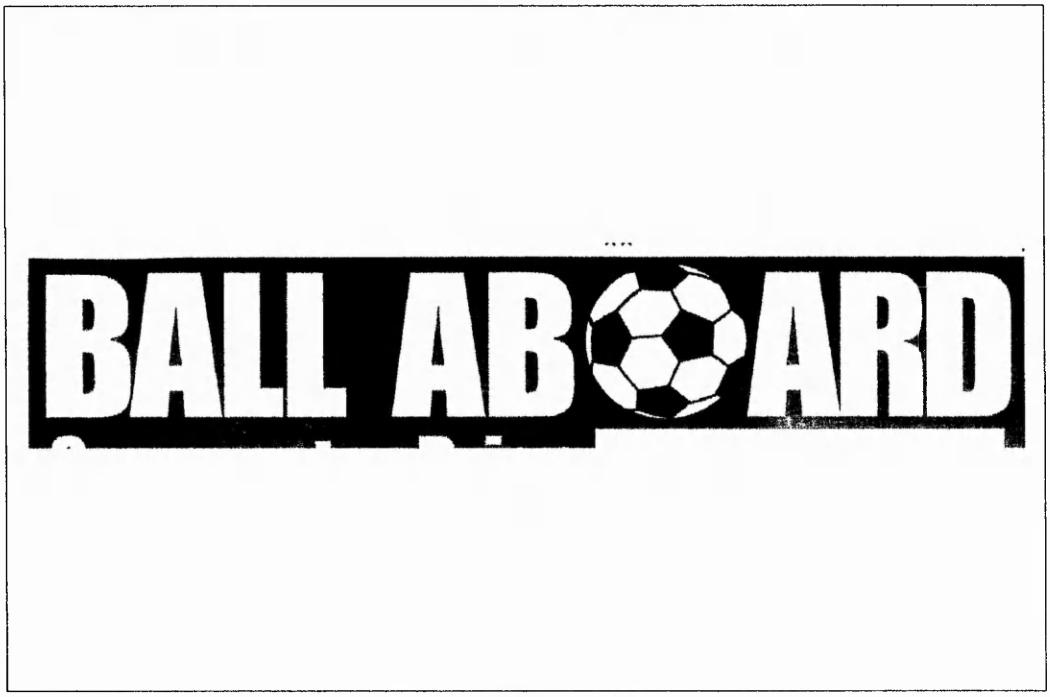


fig. 3.6.4: Daily Mirror, replacing a character with a football

fig. 3.6.5: Today newspaper's upside-down headline (4th July 1995)

'Our audience is worried about standards'

fig. 3.6.6: The Times, sub-head

fig. 3.6.7: Daily Express, sub-head

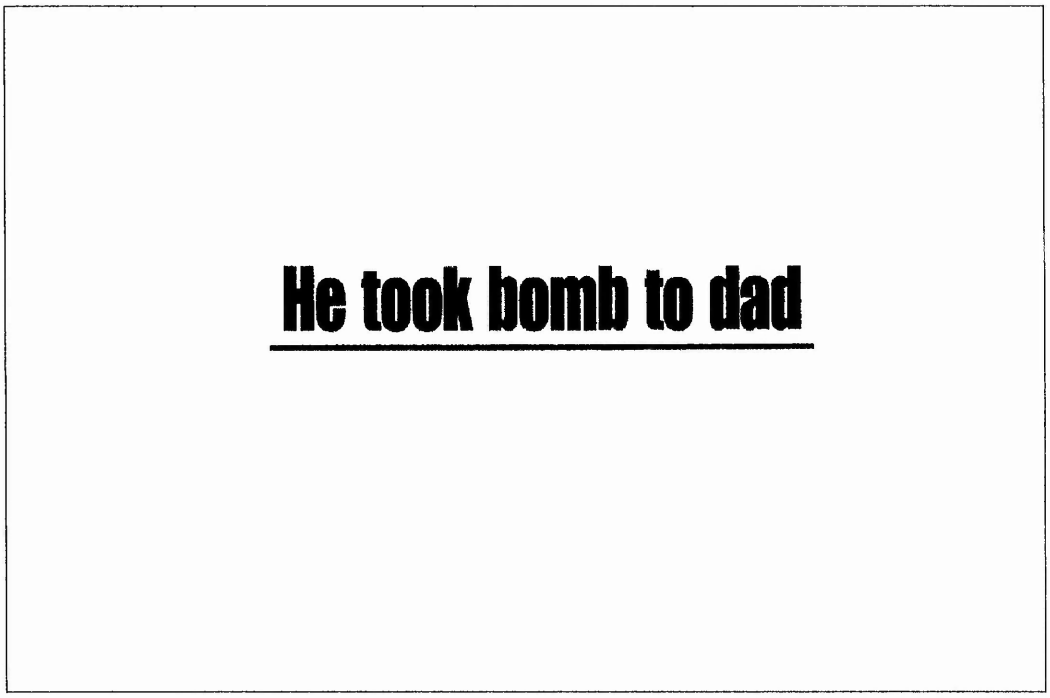


fig. 3.6.8: Daily Mirror, sub-head

fig. 3.6.9: Independent, byline

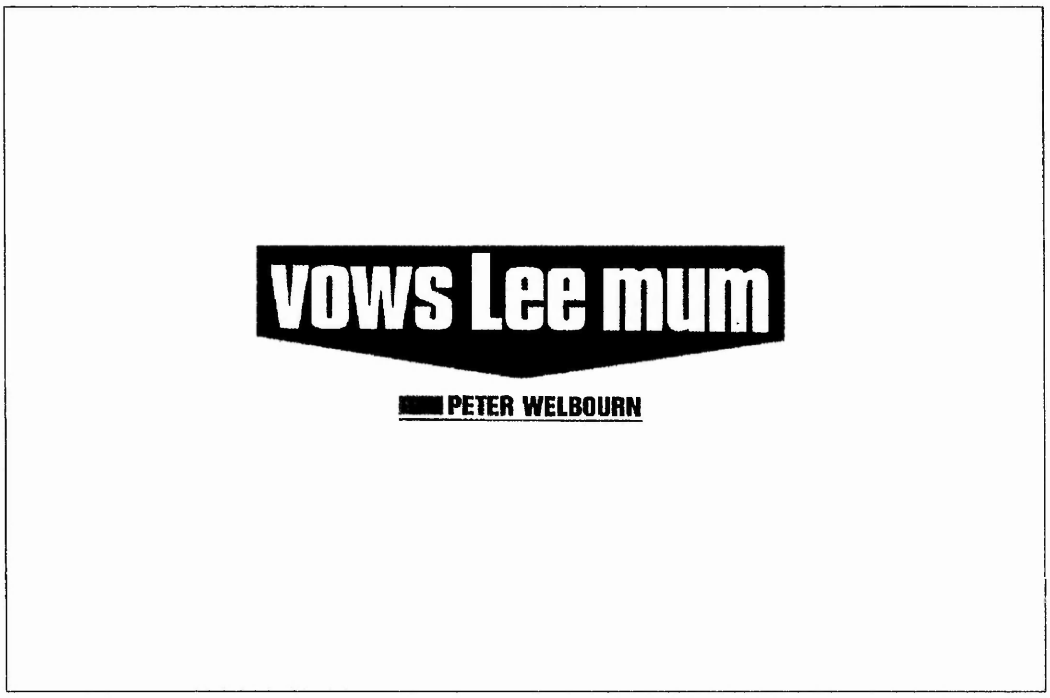


fig. 3.6.10: Star, byline

Anonymous letters 'appalling'

DANCERS at the Northern Ballet, which is investigating anonymous letters sent from within the company to senior board members, have signed a public letter of confidence in their artistic director, Christopher Gable. All 29 artistes working at Halifax, the company's current base, have declared themselves "shocked, disturbed and appalled" by the letters, which include copies of letters from Mr Gable strongly criticising dancers' behaviour earlier this year.

The letters described the company as seething with discontent and suffering from a decline in standards. — *Martin Wainwright*

Inquiry behind schedule

BRITAIN'S biggest planning inquiry, into a fifth terminal at Heathrow Airport, is running four weeks late just two months after it started. Operators fear that a decision on the £1.2 billion terminal will not be taken until early 1998, which would mean the first phase would not be completed before 2002.

The British Airways chairman, Sir Colin Marshall, said yesterday: "It is a sad reflection on the bureaucratic process in this country that such a key and vitally important decision is going to be held up for so long."

BA was due to start giving evidence this week, but this has been put back to the first week in August as so many people want to ask questions at the inquiry

fig. 3.6.11: Top: Guardian news item, with byline included at the item's end
Bottom: Guardian news item with no byline

fig. 3.6.12: FT, picture cluster

content in spite of the marginally different camera angles." (MacGregor 1997, p. 100)

Obviously, the event's importance almost guarantees that this type of repetition will happen; the posed celebrations in Downing Street would attract all news gatherers and reporters. This picture cluster was in fact a representation of actuality, of victory celebrations, rather than an announcement of the vote or the vote itself (fig 3.6.12 - 3.6.15).

Thematic news visuals

News visuals are thematic, having their own genres. The Glasgow University Media Group (1980) have studied and classified television news visuals with particular reference to their iconic and semiotic content. The 'talking head' - the newscaster delivering news content to camera - as seen throughout television news is the most visible and widely used.

Genres are apparent in this study's sample of printed news.

i. Fractured actuality

The reporting of actuality, the capture of an event's 'reality' is shown on the majority of front pages in the sample. A sense of 'fractured actuality' is prevalent in the sample, since what is being written about in the item's text and what is being seen via its photographs rarely coincide: these photographs aren't communicating what is being reported.

ii. Static talking-head

A subject-to-camera shot is prevalent, similar to the newscaster or correspondent shot or the vox pop frequently used in television. These images can be divided into two types: the posed publicity shot or staged photograph, of the subject looking directly into the camera and the unarranged or unstaged shot when the subject is photographed in mid-speech, for instance. These images are used for one of two reasons: to either accompany a journalist's byline, as a method of visual identification, or as an image in a news item. (fig. 3.6.16 - 3.6.17)

iii. Frequency of standardised images

The main story seems to attract more of these type of images (static talking-head) than one further down the scale of priorities. This statement isn't always borne out, though since they occurred frequently across the sample, in a wide range of items of varying news-worthiness. This predominance of the head and shoulders shot in newspapers runs across the tabloid/broadsheet boundary. A criticism made against tabloids - that they are more visually-based than broadsheets - is also fielded since certain broadsheets used more static talking heads in less pages than their tabloid counterparts. This proliferation of a standardised image, repeating to all extents the same image, predominantly middle-aged men in suits - specifically in the reporting of a political event - supports an observation initially made of television news.

> "...the image (of the newscaster)...framed at pocket-top at an impersonal distance, is the typical basic image of the news bulletin."
> (Glasgow University Media Group 1995, p.256)

fig. 3.6.13: Guardian, picture cluster

fig. 3.6.14: Daily Telegraph, picture cluster

fig. 3.6.15: Independent, picture cluster

fig. 3.6.16: Daily Mail, static talking head: posed publicity shot

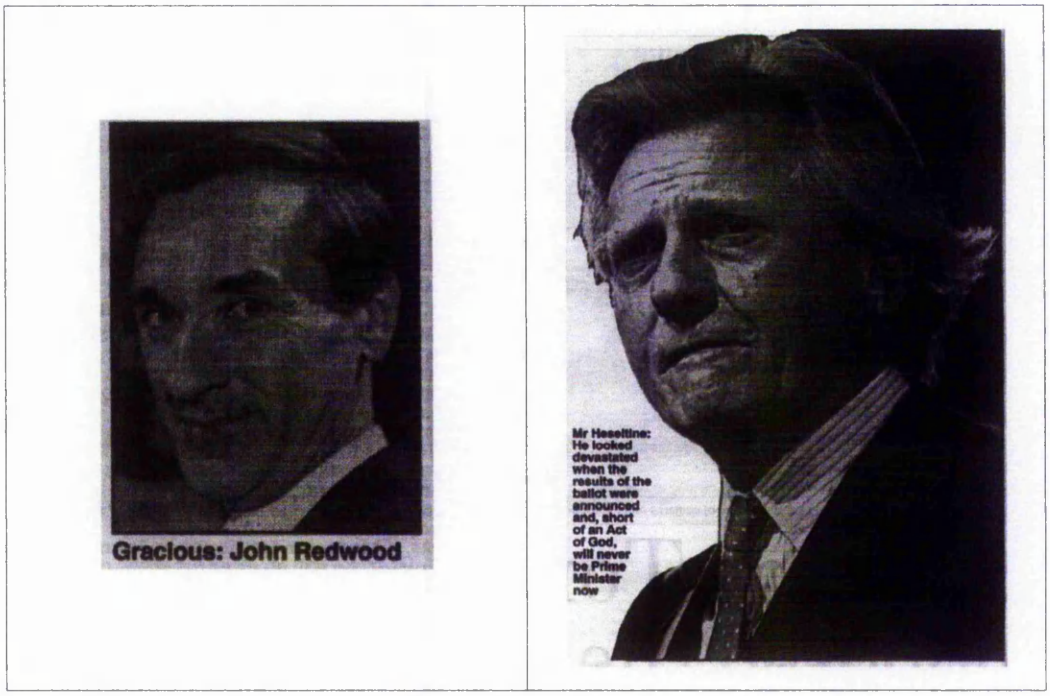


fig. 3.6.17: Left: Daily Mail, static talking head: posed publicity shot
Right: Daily Mail, static talking head: unstaged shot

fig. 3.6.18: Financial TImes: 8 columns on left hand page; 7 columns on right hand page

The Grid

The grid is a network of largely unseen lines. It implies a sense of order, creating an environment in which information can be quickly and simply organised and visualised. A grid in newspapers is measured by the height of the page: column inches, and its width: column widths. This underlying soft structure orders the entire signal. In broadsheet newspapers, an eight column grid of about 40mm width is universal, and is maintained throughout (fig. 3.6.18). In tabloid signals however, the grid is more flexible.

In many samples in the study, it was difficult to guess the underlying structure of any particular page. The Sun for instance ran the main news item across pages two and three, using four different column widths (fig. 3.6.19).

Columns

Columns are a visual method to effectively organise and structure printed information.

Column widths

Column width is flexible and dynamic. Particularly in the case of tabloid newspapers, column widths can be altered when a number of stories are being presented simultaneously (fig. 3.6.20 - 3.6.22). The column width of an item is often altered within the course of the first one or two paragraphs: from being set at two-column widths, to a single column as the item progresses. Double-column width implies a slowing down of the reader, as is seen in its use most often in an item's introduction.

This technique was used in all of the tabloids in the study - and one broadsheet: the Daily Telegraph (fig. 3.6.23). Here, a news item's beginning is stressed both in terms of typography and content: by being given greater weight and running across more than one column, sometimes with the use of capitals reflecting the inverted pyramid structure of news, summarising the item into one easily digestable nugget.

Column justification

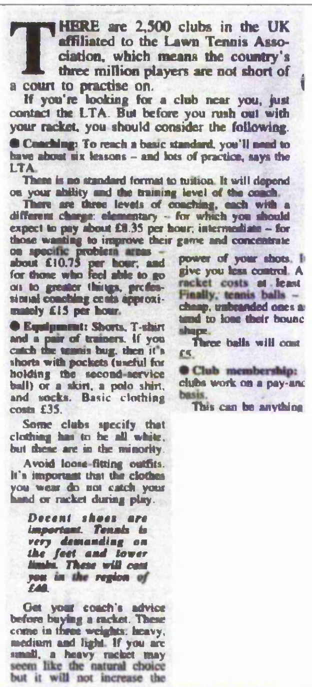
Justification of text - line lengths of equal length, vertically-aligned side margins - is used most frequently in newspaper design (fig. 3.6.24). Having text either justified or unjustified - flush left or flush right - can be used to signal certain qualities to the information being displayed (fig. 3.6.25).

The Star ran unjustified and justified on one news page in the context of a short item detailing John Major's reaction to the leadership result (fig. 3.6.26). Perhaps the personal nature of this item lent itself to a less formal method of presentation. Generally, the left alignment of an item is seen to be linked to the brevity - in terms of word length - of that item.

Rules and cut-offs

The white space of the page is subdivided or partitioned both horizontally and vertically using

fig. 3.6.19: The Sun,four differing column widths



THERE are 2,500 clubs in the UK affiliated to the Lawn Tennis Association, which means the country's three million players are not short of a court to practise on.

If you're looking for a club near you, just contact the LTA. But before you rush out with your racket, you should consider the following.

● **Coaching:** To reach a basic standard, you'll need to have about six lessons – and lots of practice, says the LTA.

There is no standard format to tuition. It will depend on your ability and the training level of the coach.

There are three levels of coaching, each with a different charge: elementary – for which you should expect to pay about £8.35 per hour; intermediate – for those wanting to improve their game and concentrate on specific problem areas – about £10.75 per hour; and for those who feel able to go on to greater things, professional coaching costs approximately £15 per hour.

● **Equipment:** Shorts, T-shirt and a pair of trainers. If you catch the tennis bug, then it's shorts with pockets (useful for holding the second-service ball) or a skirt, a polo shirt, and socks. Basic clothing costs £35.

Some clubs specify that clothing has to be all white, but these are in the minority.

Avoid loose-fitting outfits. It's important that the clothes you wear do not catch your hand or racket during play.

Decent shoes are important. Tennis is very demanding on the feet and lower limbs. These will cost you in the region of £40.

Get your coach's advice before buying a racket. These come in three weights: heavy, medium and light. If you are small, a heavy racket may seem like the natural choice but it will not increase the

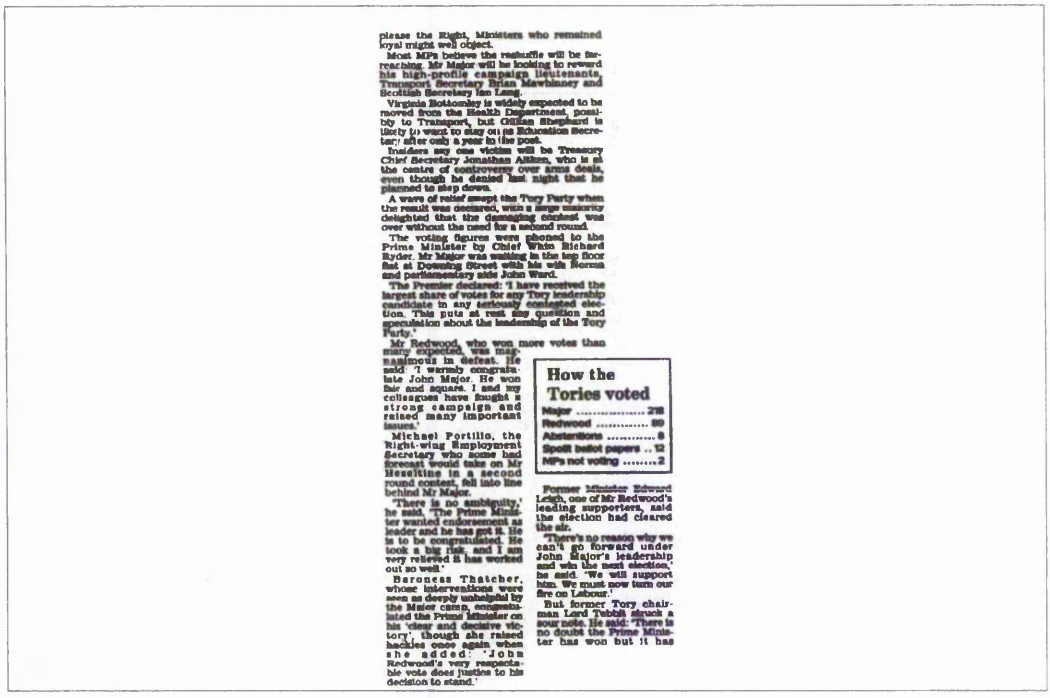
power of your shots. I[t] give you less control. A racket costs at least Finally, tennis balls – cheap, unbranded ones a[re] tend to lose their bounc[e] shape.

Three balls will cost £5.

● **Club membership:** clubs work on a pay-and basis.

This can be anything

fig 3.6.20: Today, flexible column with paragraph inset (4th July 1995)



please the Right, Ministers who remained loyal might well object.

Most MPs believe the reshuffle will be far-reaching. Mr Major will be looking to reward his high-profile campaign lieutenants, Transport Secretary Brian Mawhinney and Scottish Secretary Ian Lang.

Virginia Bottomley is widely expected to be moved from the Health Department, possibly to Transport, but Gillian Shephard is likely to want to stay on as Education Secretary after only a year in the post.

Insiders say one victim will be Treasury Chief Secretary Jonathan Aitken, who is at the centre of controversy over arms deals, even though he denied last night that he planned to step down.

A wave of relief swept the Tory Party when the result was declared, with a large majority delighted that the damaging contest was over without the need for a second round.

The voting figures were phoned to the Prime Minister by Chief Whip Richard Ryder. Mr Major was waiting in the top floor flat at Downing Street with his wife Norma and parliamentary aide John Ward.

The Premier declared: 'I have received the largest share of votes for any Tory leadership candidate in any seriously contested election. This puts at rest any question and speculation about the leadership of the Tory Party.'

Mr Redwood, who won more votes than many expected, was magnanimous in defeat. He said: 'I warmly congratulate John Major. He won fair and square. I and my colleagues have fought a strong campaign and raised many important issues.'

Michael Portillo, the Right-wing Employment Secretary who some had forecast would take on Mr Heseltine in a second round contest, fell into line behind Mr Major.

'There is no ambiguity,' he said. 'The Prime Minister wanted endorsement as leader and he has got it. He is to be congratulated. He took a big risk, and I am very relieved it has worked out so well.'

Baroness Thatcher, whose interventions were seen as deeply unhelpful by the Major camp, congratulated the Prime Minister on his 'clear and decisive victory', though she raised hackles once again when she added: 'John Redwood's very respectable vote does justice to his decision to stand.'

How the Tories voted

Major	218
Redwood	89
Abstentions	8
Spoilt ballot papers	12
MPs not voting	2

Former Minister Edward Leigh, one of Mr Redwood's leading supporters, said the election had cleared the air.

'There's no reason why we can't go forward under John Major's leadership and win the next election,' he said. 'We will support him. We must now turn our fire on Labour.'

But former Tory chairman Lord Tebbit struck a sour note. He said: 'There is no doubt the Prime Minister has won but it has

fig. 3.6.21: Daily Mail, dynamic column width across one and a half columns

PASSIONATE Liz Bee's steamy sex secrets were broadcast to a packed doctor's waiting room — over the surgery INTERCOM.

The 25-year-old blonde was confessing that a condom had split during an energetic night of love with her boyfriend. But as she went into details of her private life, every word was transmitted to other patients in the waiting room.

Liz had called in at the Brook Advisory Centre in Bristol to pick up a morning-after pill. But the doctor she was confiding in had accidentally left the surgery's intercom switched on.

Workmate Nicky Wills, 23, was flicking through a magazine in the waiting room when she suddenly recognised her friend's voice.

Shocked Nicky started coughing in a bid to drown out her pal's confessions — but everybody was straining to hear the lurid details.

Annoyed

Computer operator Liz, from Montpelier, Bristol, only found out the next day when her mate told her.

She said yesterday: "I'm not cross that it happened because it was an accident but I am annoyed that the clinic didn't tell me."

A clinic spokesman said: "We apologise profusely for any embarrassment or distress.

"It was an isolated incident and we have revised our intercom system."

WEALTH OF BEAMS

WACKY art student Pierpaolo Inga, 31, has painted a huge smiling face on the front of his house in Brighton, East Sussex, to cheer up passers-by. "People grin back," he says.

Lost weekend .. at the cop shop

AN INNOCENT man was banged up in a nick for 16 hours ... after getting locked in when he went to report an assault.

He lost his way after somehow breaching a security door and ended up in a deserted corridor leading to the cells. But nobody heard his desperate cries for help because it was the weekend.

And he was only freed after a bobby heard shouts as he reported for duty the following day.

TOM FULLERTON

The Lancashire man — who is not being named to spare his blushes — entered Oldham police station by a back door.

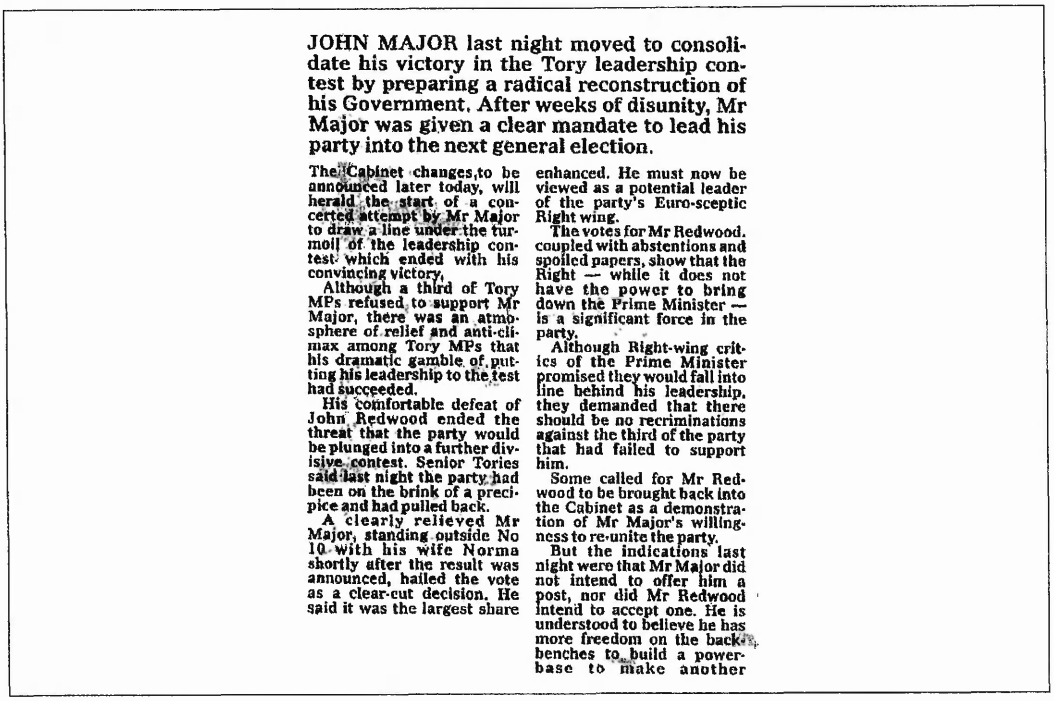
Shut

He missed the clearly-marked public entrance.

Then he took another wrong turn towards the cells ... and the one-way security door slammed shut behind him! A police spokesman smiled: "We just haven't a clue how he managed to get where he did. We don't normally have a problem with people trying to get *into* the cells."

He added: "We offered him a cup of tea when we found him ... but he was in too much of a hurry to get home and explain to his missus why he hadn't been home all night."

fig. 3.6.22: Star, dynamic column width across three columns



JOHN MAJOR last night moved to consolidate his victory in the Tory leadership contest by preparing a radical reconstruction of his Government. After weeks of disunity, Mr Major was given a clear mandate to lead his party into the next general election.

The Cabinet changes,to be announced later today, will herald the start of a concerted attempt by Mr Major to draw a line under the turmoil of the leadership contest which ended with his convincing victory.

Although a third of Tory MPs refused to support Mr Major, there was an atmosphere of relief and anti-climax among Tory MPs that his dramatic gamble of putting his leadership to the test had succeeded.

His comfortable defeat of John Redwood ended the threat that the party would be plunged into a further divisive contest. Senior Tories said last night the party had been on the brink of a precipice and had pulled back.

A clearly relieved Mr Major, standing outside No 10 with his wife Norma shortly after the result was announced, hailed the vote as a clear-cut decision. He said it was the largest share enhanced. He must now be viewed as a potential leader of the party's Euro-sceptic Right wing.

The votes for Mr Redwood, coupled with abstentions and spoiled papers, show that the Right — while it does not have the power to bring down the Prime Minister — is a significant force in the party.

Although Right-wing critics of the Prime Minister promised they would fall into line behind his leadership, they demanded that there should be no recriminations against the third of the party that had failed to support him.

Some called for Mr Redwood to be brought back into the Cabinet as a demonstration of Mr Major's willingness to re-unite the party.

But the indications last night were that Mr Major did not intend to offer him a post, nor did Mr Redwood intend to accept one. He is understood to believe he has more freedom on the backbenches to build a power-base to make another

fig. 3.6.23: Daily Telegraph, dynamic column width across two columns

bustly loyal campaign for Mr Major's re-election. Euro-sceptical Tories would be pleased, Euro-philes could live with the prospect.

What was most intriguing MPs on both sides after a less-than-triumphant result — which Tont Blair's handlers called "perfect for us" — was the fate of the potential candidates whose second round prospects collapsed when the figures were announced to cheering backbenchers by Sir Marcus Fox, chairman of the backbench 1922 Committee, at 5.20 pm.

Michael Heseltine, who spent two hours with Mr Major before lunch, supposedly on departmental business, was said

fig.3.6.24: The Guardian, column justification

News in brief

Wisden plans reply to 'racist' cricket article

WISDEN Cricket Monthly editor David Frith, under fire over an article that questioned the commitment of foreign-born players to the England team, has promised to present the other side of the story in the magazine's next issue.

England cricket stars Phillip DeFreitas and Devon Malcolm have threatened legal action over Robert Henderson's claim that players of Asian or "negro" extraction feel less pride and identity with the national side than their home grown counterparts.

Mr Frith said yesterday: "Wisden Cricket Monthly has always been an open forum for views on cricket and associated topics. Any critics who have felt that the magazine may have been used for extremist views are assured that the next edition will carry much that takes strong issue with Mr Henderson's point of view."

In the article Henderson claimed: "Part of a coloured England-qualified player feels satisfaction (perhaps subconsciously) at seeing England humiliated, because of post-imperial myths of oppression and exploitation."

Roads 'threaten countryside'

FURTHER cuts in road building and a comprehensive package to raise the cost of private motoring were recommended by the Council for the Protection of Rural England yesterday. It called for higher taxes on new cars and petrol, charges on motorways and busy roads, including those in national parks, and steeper parking fees.

Traffic in rural areas could increase by up to 30 per cent over 10 years, said the council in its report Changing Lanes. It warned: "Road transport and the countryside are on a collision course which, if left unchecked, could result in environmental problems just as serious as those threatening our towns and cities." — James Meikle

Lords uphold ban on Amnesty

A BAR on human rights pressure group Amnesty International advertising on radio was yesterday upheld as lawful in a High Court test case. In a decision likely to hit many other campaigning bodies, two judges ruled that broadcasting regulators were entitled to conclude that the organisation's objectives were "mainly political" and that it should be denied access to the UK's commercial airwaves.

David Bull, director of Amnesty's British section (AIBS), said television as well as radio could now become a "no go" area for its commercials and it was planning to appeal, if necessary taking its case to the European Court of Human Rights.

But Lord Justice Kennedy, sitting with Mr Justice McCullough, said listeners deserved "freedom from being virtually forced to listen to unsolicited information of a commercial kind." The judge also said the public had to be protected against the danger of the wealthy buying access to the media and "distorting the democratic process."

Mr Justice McCullough said the ruling meant Amnesty "cannot even advertise that it is holding a concert, with tickets at certain prices, or that it has Christmas cards for sale".

fig. 3.6.25: The Guardian News in Brief, unjustified - left aligned - column

fig. 3.6.26: Star, unjustified columns on a news page

visible lines or rules. Vertical column rules are used to separate items running side by side, whose content is unconnected or distinct. Not using them can signal a connection, that the items are parts of a conceptual whole, for example. Weight of rules, either heavy (thick), or light (thin) can also signal different kinds of relationships between a number of items. The Guardian separated items of similar content by a light rule whereas this distinction is made more forcefully in unconnected items, when nine rules are laid on top of each other (fig. 3.6.27).

Boxes

Boxes are used to enclose shorter self-contained items, largely in tabloid. The Financial Times encloses its 'News In Brief' items (short paragraph summaries) in a box, taking up two columns for just over half a page (fig. 3.6.28). The Daily Mirror enclosed two short items in a box, while the box itself is surrounded by another item (fig. 3.6.29).

Illustrations

Hand-drawn or computer-rendered illustrations, are employed throughout all news signals in the sample. Three types of illustration are apparent in the study.

First, and perhaps most widely recognised are humourous hand-drawn cartoons inserted at spots in the newspaper whose content refers to a main news item (fig. 3.6.30). This type of illustration appears in all newspapers, both tabloid and broadsheet with no discernible difference in terms of frequency.

Second are Illustrations used in analysis or comment sections. Again, these refer to a leading news item, but are often larger in size and placed on a particular news or comment page (fig. 3.6.31).

Thirdly, the front-page illustration used as a dominant visual (fig. 3.6.32). Again these are large and often humourous, some using computer-rendered photomontage (fig. 3.6.33) or similar illustrative techniques with notable figures portrayed as characters from fiction or caricatured in some way. Only one of the broadsheet newspapers used an illustration as its front-page's dominant visual (fig. 3.6.34). What is most apparent from this brief survey is that firstly, front-page illustrations are most often used in tabloid newspapers, and secondly that a newspaper's editorial stance is reflected in the illustration's particular tone.

Information Graphics and section names

Information graphics, ranging from graphs, maps, charts, logos to icons can be identified in abundance in all newspapers in the sample. Often, section signals or logos - as small graphic symbols - compartmentalise a page or pages. Broadsheet section names are purely typographic signifiers. As has been discussed, a key news story is often divided into sub-items. In the broadsheet newspapers in the study, these sub-section names were also signalled purely by the use of a word.

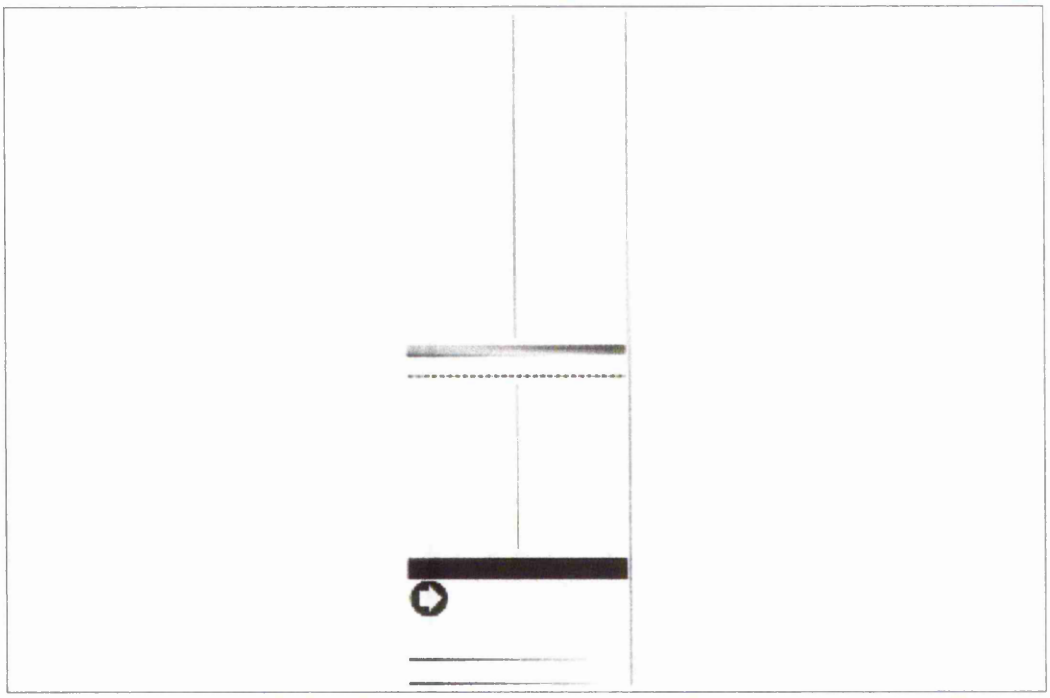


fig. 3.6.27: The Guardian, rules and cut-offs

fig. 3.6.28: Financial Tims, News in Brief enclosed within a box

Brave model's new romance

BRAVE model Heather Mills announced her engagement to new love Marcus Stapleton yesterday after a whirlwind two-week romance.

Heather, 27, who lost a leg when she was hit by a police motorcycle in 1993, said: "We are madly in love. It was love at first sight."

She met Marcus, a 32-year-old Lawn Tennis Official, at London's Hurlingham Club.

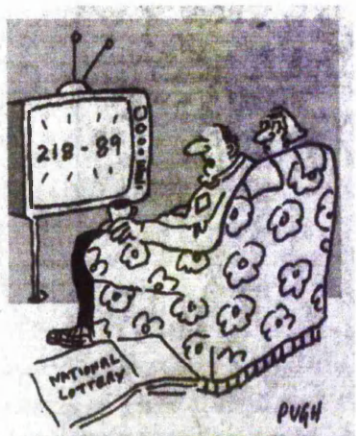
Carer accused of murder bid

A HOME help was charged yesterday over a suspected mercy killing attempt.

Rachel Heath, 30, was bailed to appear in court next month accused of trying to murder her friend Kathleen Corfield, a cancer patient.

Mrs Corfield, 71, died in hospital at Southampton soon after a visit by Heath, who was detained in the grounds.

fig. 3.6.29: Daily Mirror, two items in a box



"Looks like there'll only be one winner"

fig. 3.6.30: The Times, humourous illustration

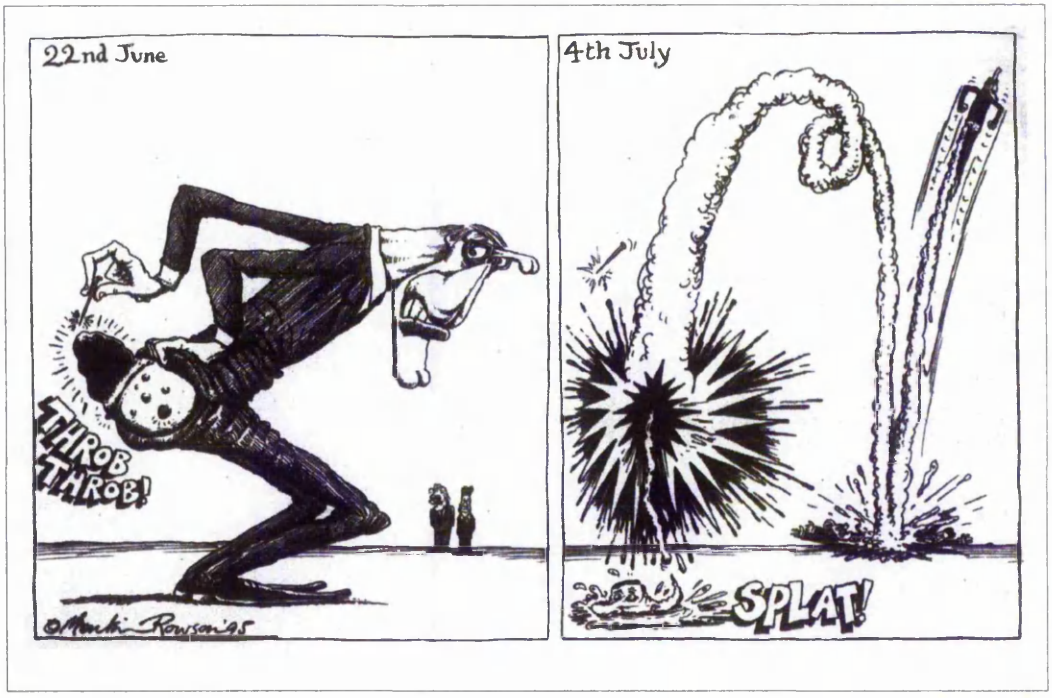


fig. 3.6.31: The Guardian, humourous illustration on comment pages

fig. 3.6.32: Left: Daily Express front cover illustration; Middle: Daily Mirror; Right: Star

fig. 3.6.33: Sun: front cover photomontage

fig. 3.6.34: The Times, front cover illustration

However, sub-items in certain tabloid news signals were signalled by the use of a small section graphic; an abstraction of a key visual element of the news item, for instance. In a number of cases, these graphic soft structures explicitly communicated the particular political stance of the newspaper (fig. 3.6.35).

The use of small graphic icons as sub-section identification devices depended upon the use and repetition across signals of a key image in the story. This type of abstraction, the creation of a visual shorthand, is prevalent in the communication of news.

Recurrent, cliched images were apparent. The Conservative Party logo, the blue rosette and simply the colour blue all signal 'conservative-ness'; a visual language which the reader can recognise since these values are repeated throughout the news media.

Graphs

Other graphic elements are employed to deliver information via a combination of text and image. Often, these graphics help to explain items with a particular numerical focus; to illustrate something which might be considered complex. In the example of the analysis, the result of the leadership election was signalled in all but one case - The Times - in numeric form.

Of the remaining ten, four used 'pure' numeric communication - simply printing the result - and six used a combination of text and image to graphically communicate the result. The graphic form of a bar chart was used, in one case presented three-dimensionally. Blue was the predominant colour, the Conservative Party logo - a blue torch - was included as an element of their graphic in two instances. The image of a blue rosette was used in other signals in the sample (fig. 3.6.36 - 3.6.39).

Other graphic soft structures were used. The Financial Times and the Guardian placed a visual index at the top of the page - above the nameplate - signalling key content in the signal, combining text and photograph or illustration (fig. 3.6.40). Graphics are used to contextualise an item; a graph on page seven of the Sun supplied a historical or chronological illustration of the fortunes of John Major (titled 'From Major to Minor'). Within this firm structure, text, images and Conservative Party logo were all used (fig. 3.6.41). Most graphs were used - perhaps not unsurprisingly - in the Financial Times: seven in the twelve news pages.

Indices and thematic links

Effective navigation of the news signal is essential. Interior aids to direction and section names go some way toward assisting the reader. Exterior aids - indices or lists - usually featured on the front page supply a preview of the signal's content (fig. 3.6.40). A range of visual indices were apparent in the sample, from comprehensive indices under five headings with a total of 37 links across a wide range of items to an index linking to only three interior items, each an aspect of the main story. Again, a distinction between broadsheet and tabloid, respectively can be noted.

Comprehensive - thematic - indices were used, most widely in broadsheet news signals. (fig. 3.6.42) Here, key items were listed together under a particular title; 'IN BRIEF' or 'COMMENT',

fig. 3.6.35: graphic section signals. Top left:The Sun; top right: Daily Express; bottom: Daily Mirror

fig. 3.6.36: Leadership poll results. Left: Daily Express; right: The Guardian

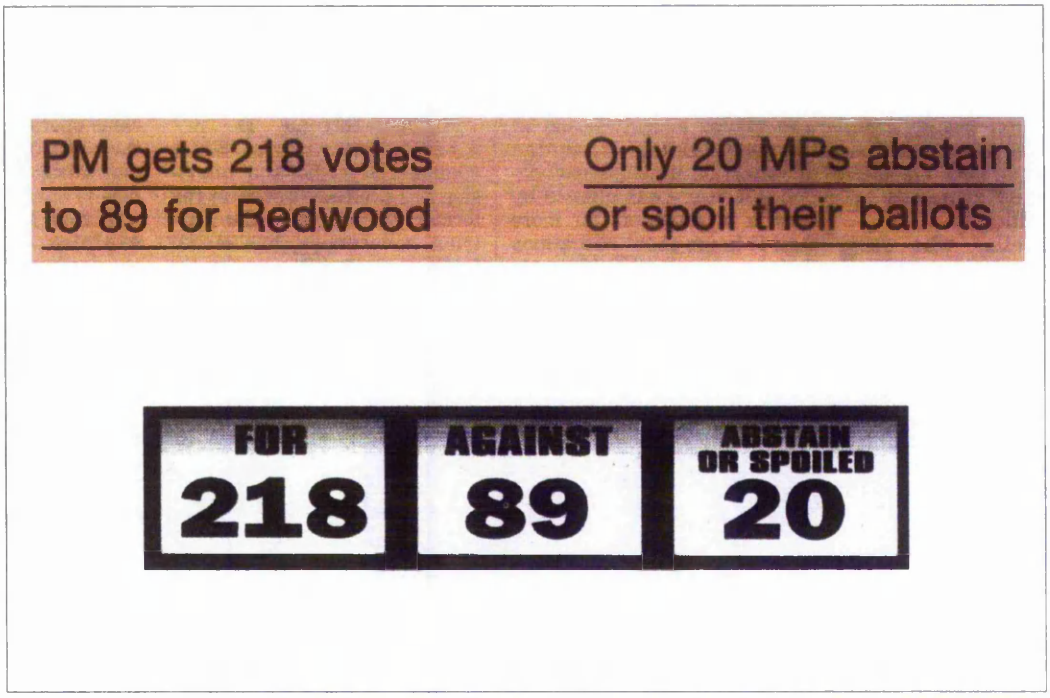


fig. 3.6.37: Leadership poll results. Top: Financial Times; bottom: Star

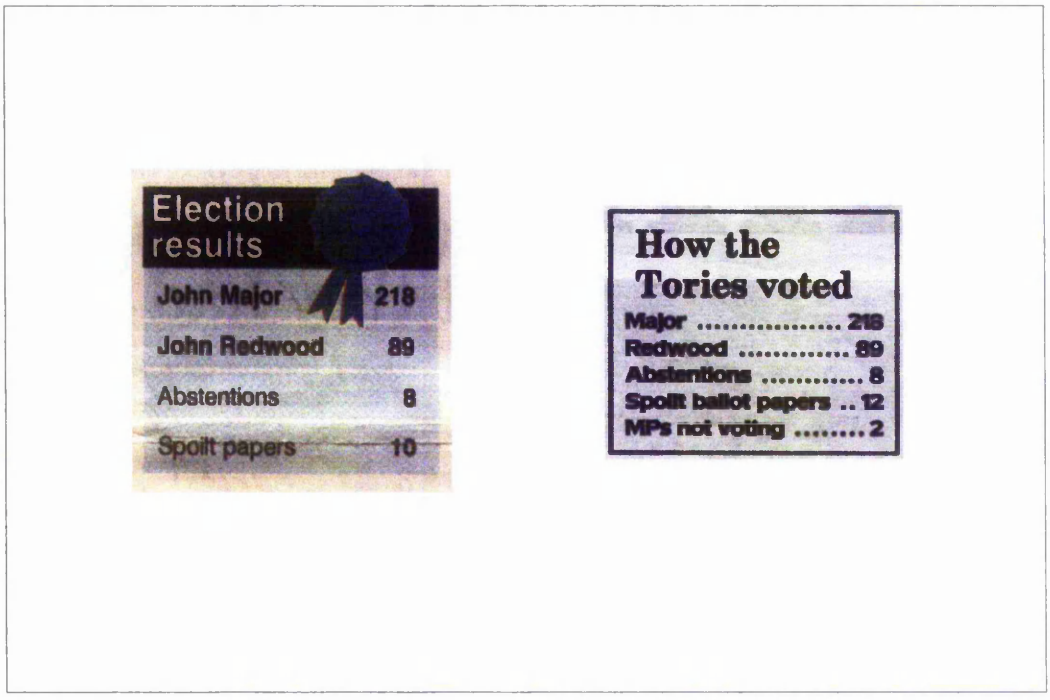


fig. 3.6.38: Leadership poll results. Left: Independent; right: Daily Mail

fig. 3.6.39: Leadership poll results. Left: Daily Mirror; right: The Sun

fig. 3.6.40: visual indices: top: Financial Times; bottom: The Guardian

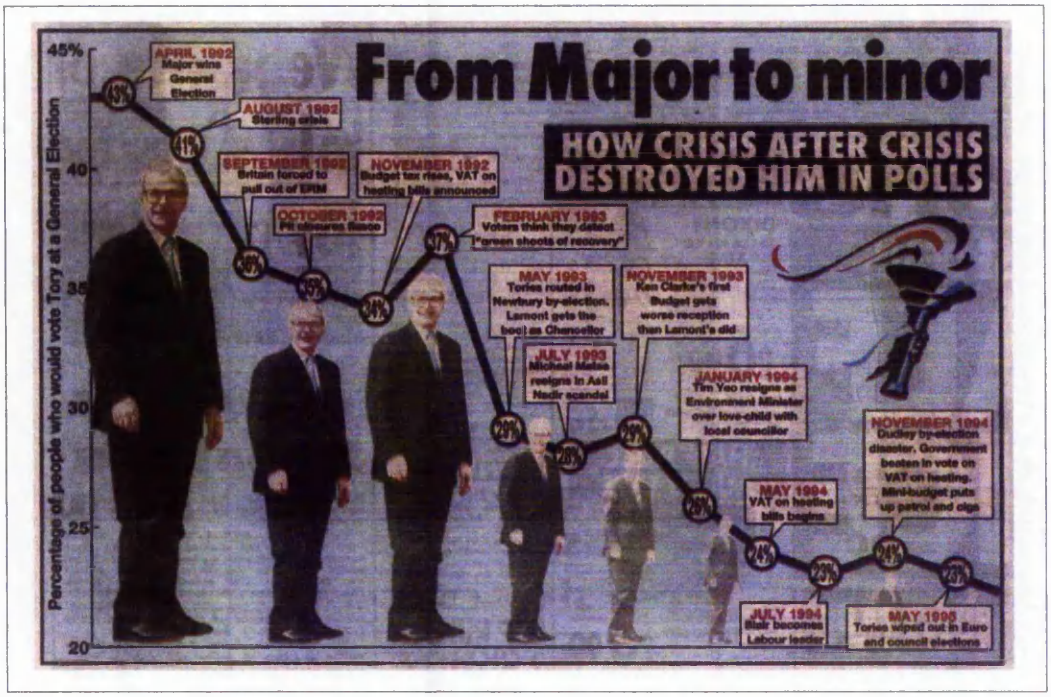
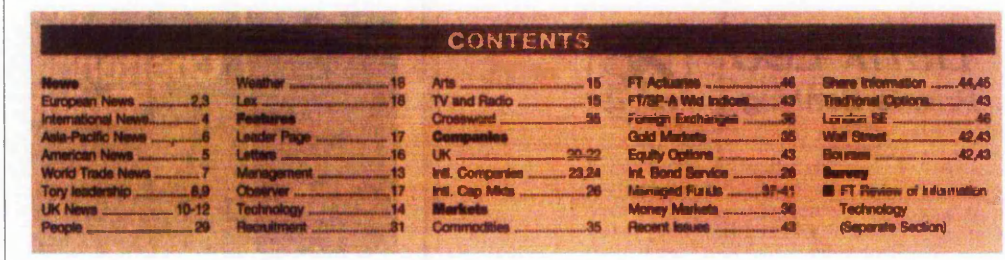


fig. 3.6.41: The Sun, 'From Major to Minor' graph


CONTENTS

News	Weather 18	Arts 15	FT Actuaries 46	Share Information 44,45
European News 2,3	Lex 18	TV and Radio 15	FT/S&P-A Wld Indices 43	Traditional Options 43
International News 4	**Features**	Crossword 38	Foreign Exchanges 38	London SE 46
Asia-Pacific News 6	Leader Page 17	**Companies**	Gold Markets 38	Wall Street 42,43
American News 5	Letters 16	UK 20-22	Equity Options 43	Bourses 42,43
World Trade News 7	Management 13	Intl. Companies 23,24	Int. Bond Service 28	**Survey**
Tory leadership 8,9	Observer 17	Int. Cap Mkts 26	Managed Funds 37-41	■ FT Review of Information Technology (Separate Section)
UK News 10-12	Technology 14	**Markets**	Money Markets 36	
People 29	Recruitment 31	Commodities 35	Recent Issues 43	

fig. 3.6.42: Financial Times, comprehensive visual index

fig. 3.6.43: top: Daily Mail, links to interior news items; middle: Daily Mail, link to main news item; bottom: Daily Mirror, link to main news item

or particular section names; 'INTERNATIONAL NEWS' or 'POLITICS'. The number of links to the main news item on the front pages of the broadsheet reflects the greater amount of coverage given to that story. Tabloid signals in this sample, being dominated by one item, ran with that item from the front page, signalling no other stories (fig. 3.6.43). However, the appearance of links and/or indices in all newspapers in the sample signals an acknowledgement of the necessity for some means of communicating navigational pathways.

3.7 Soft structures: television news

Soft structures - 'visually determined units or relationships' written on the screen are designed in the sense that all broadcastable material or information is: scripts or reports are written, revised and edited, images are selected and/or are composed.

For instance, the talking head - often seen in television news - is constructed to present a certain size image of the presenter, against a specific background. The variables within this soft structure can be altered as happened when Dan Rather replaced Walter Cronkite as anchor on the CBS News network in the United States. Cronkite was a hugely respected and trusted figure, and Rather had difficulty in establishing himself as a similarly imposing presence on-screen. The editor's decision was to increase the size of Rather's viewable image:the camera was brought closer to him, his head and shoulders got bigger and this - apparently - had the desired effect. (Breaking the News, BBC 2, 29 06 97)

The talking head

The most prominent soft structure in the television news space is the use of the presenter, or correspondent's talking head and shoulders. This combined verbal and visual soft structure can be considered the lead element in the space: the 'institutional voice' imported from radio. Its function is to deliver a large amount of content, establish and maintain links between disparate news items, to direct the flow of items, providing some form of continuity between the items and to introduce other elements into the signal by means of verbal introductions or cues (fig. 3.7.1 - 3.7.4).

> "As on radio, the news was read and, in television, in-vision newscasters became authoritative and much respected figures." (MacGregor 1997 p. 118)

The Glasgow University Media Group (1980) argue that the talking head is a direct consequence of television's visual nature; that moving film in which the speaker's voice can be heard is "an important element (in) creating the preponderance of 'talking heads'..." (p. 396)

The piece-to-camera

Dugdale (1995) asserts that the 'piece to camera' (one manifestation of the talking head) is a poor method of communicating, since the visual signal provides the viewer with too much information - the majority of which is unimportant - offering "too much focus on (the backdrop,

fig. 3.7.1: Channel Four news, talking head

figs. 3.7.2: Channel Four news, talking head

fig. 3.7.3: BBC Breakfast News, talking head

fig. 3.7.4: BBC Six o' Clock news, talking head

the reporter's looks or voice) instead of (the item's) content."

From the sample, there was an apparent hierarchy in those presented as a talking head to camera: the caster, a nominated correspondent, a nominated expert and the audience, reflected by those people selected for so-called 'vox-pops'.

Hood (1980) questions those individuals selected to be a talking head: "...you will find that they constitute a small and carefully defined group." (p. 3) The members of this group, he claims,

> "...(a)ll...have one thing in common. They are there to give us information which we are asked to assume is accurate (as indeed some of it is), unbiased and authoritative, (which it is less likely to be). They have authority vested in them by the television organisations and can be described in a useful phrase as 'bearers of truth'. (p. 4)

The talking head, therefore, could be regarded as a poor soft structure in terms of its capacity for visual communication. but Hood, the GUMG and MacGregor agree that it acts to produce and maintain an authority in the producer or transmitter of, or locus for the news. The person whose head the viewer sees is invested with a potent historical and cultural presence and power.

In the sample of television news signals, in both fixed-point and rolling-news signals, the talking head appeared throughout. As Hood points out, the individuals appearing as talking heads were from a select number of sources. As indicated, most obvious was the news-caster or reader. These highly recognised and recognisable figures maintained a highly similar visual identity - male or female, smartly dressed, maintaining a serious demeanour, looking directly through the lens - across all channels and signals. The only apparent aesthetic decision associated with the caster as talking head seemed to be whether they are presented on the right or left of the screen.

Headlines

Headlines are presented at the beginning of a signal, grouped together in a pre-ordered sequence - often accompanied by images - which is then maintained in the course of the signal. This headline sequence announces and previews the structure and content of the programme to follow. A hierarchy of importance is established, one that is rarely broken.

The Glasgow University Media Group (1995) recognise their importance and make the distinction between headlines on television and those on the printed page.

> "Headlines are seen as having crucial importance in the language of newspaper reporting. They are one of the most important devices for summarising and drawing attention to a story and, so far as the press is concerned, are also one of the strongest visual indicators of style. In television news they have no exact equivalent because the audience's hearing of the bulletin follows a logic which is predetermined by news producers and over which the viewers exercise no discretion...except to switch off - either mentally or physically." (p. 173)

This definition and analysis stresses the lack of control - in terms of navigation - that the viewer of television news can exercise over the signal. "They cannot turn or jump pages." (GUMG 1995 p. 173) The characteristic visual identity of newspapers, the range and fluid variation of visual and verbal signals on the page indicates style and hierarchy and a definite priority. This editorial logic is translated into a spatial one in print news, a time-based one on television where priority is defined by location in time. In the sample, in fact, this hierarchy was subverted by the presenter moving backwards along the sequence of items due to an extraordinary event.

The headline in television news is spoken: the news caster reads aloud a script over film of an event, providing the viewer with a verbal summary of the item stressing verbally what can be signalled visually on the page. Spoken headlines are also inserted into each news item as their first line - a summary lead - before progressing with its narrative text. A recap of the headlines is often inserted at the signal's mid-point, often to include a time check and to review the lead items, and progress to items of lesser importance (fig. 3.7.5).

Sub headings

The spoken word is often used in television news to 'signify a change of pace and content' in the signal. This interruption or interjection; the 'side heading' is similar to a sub heading used in newspapers. (Yorke 1990, p. 31) The use of a side heading shifts the focus of the signal to another item, the viewer having no choice but to respond. Using phrases such as 'Next, the...' , 'Coming up...' or 'Abroad now...' makes a definite link to the next item, providing the signal with a continuity, and the item with a context. The visual space changes, the spoken word might signal the beginning or the end of a specific film clip.

Body copy

The spoken word is the main means of transmitting certain information in television news. The news-caster or reporter or eyewitness or trusted source or expert each transmits news. These verbal tidings - specifically in the case of studio-bound presenters - are scripted and read out loud from a written prompt or cue. The spoken word is used alongside a number of forms of visual information; moving images in film reports, still images when commenting on a person or thing named, still or moving graphics when commenting or narrating a sequence in which the spoken word might seem to complement the imagery.

The 'voice-over' is largely associated with the moving image, as a supplement to the information being viewed. As the Glasgow University Media Group (1976) point out, the delivery of spoken content is a journalistic trait, very similar in content and intent to the body copy of newspapers. The spoken word often has a close relationship with whatever is being seen on-screen, although very often - as has been noted - it simply repeats what is seen.

> "...to recite what is happening on the screen is to lose a great opportunity of telling the viewer something worthwhile. The news-writer's skill lies in being able to convey what is not clear from the pictures." (Yorke 1990, p. 70)

fig. 3.7.5: BBC One o' Clock news, headline sequence presenting four headlines alongside the news-caster

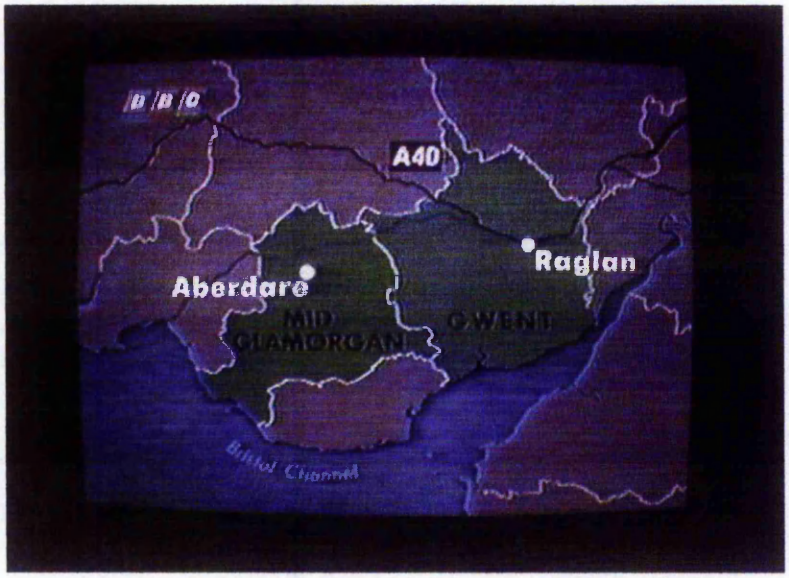


fig. 3.7.6: BBC Six o Clock News, specific words calling up a map

The verbal and visual conceptual spaces seem to converge at the point when both are presenting the same information; often when the visual responds to the verbal. A specific word or words lead to an action, calling up a map onto the screen for instance (fig. 3.7.6). TV news seems to be presenting a form of non-interactive hypertext with the viewer having no part in the process.

Synchronous sound

The verbal space - or, specifically channel - meshes with the visual space absolutely in the case of synchronous sound: the speaker can be seen - occupying the screen - and his or her word's can be heard. Synchronous sound is most often presented in the case of the talking head, since it is essential that the viewer sees the speaker. This soft structure has been criticised (Dugdale 1995) for its failure to effectively communicate, since both visual and verbal channels are being used to communicate the same information. When visual and verbal spaces converge - as in this case - a paucity of specific visual information must be acknowledged.

The voice-over

In this soft structure, images are shown and the caster relates the news text over the top of them. This soft structure is significant because of an absence: the narrator cannot be seen. This disembodied voice - the talking without the head - harks back to the first television news transmissions.

> "Post-war British television news was hardly dynamic. Radio news division produced a 10 minute bulletin which was read by an out-of-vision newsreader over the shot of a clock." (MacGregor 1997, p. 117)

Byline credits

News casters often introduce new items in the signal with a short summary, providing the item with a context. The reporter or correspondent making the report is identified by the news caster, usually before a film report begins. This credit or identification is a signal to the viewer that a change in the news space is about to take place. The reporter often repeats his or her name at the end of the report,directly to the camera, to the viewer.

Captions

Written text is used on-screen, alongside still or moving images in the form of captions, chiefly for the purposes of identification and nomination, supplying specific information about a speaker, most often their name and occupation (fig. 3.7.7). The visual channel reinforces itself although the caption is never presented without the caster nominating the person verbally.

fig. 3.7.7: BBC Six o' Clock News, byline credits/caption

fig. 3.7.8: BBC Six o' Clock news, iconic backdrop

The iconic backdrop

Still images are often placed behind or by the side of a newscaster when items are being introduced or commented upon (fig. 3.7.8 - 3.7.11). In some cases, text is included in the backdrop creating an image/text hybrid. The decision to put any elements together - image and text, image and image - in the iconic backdrop obviously implies a connection between them.

The inclusion of a written element goes some way to aid the communication of the iconic backdrop, and perhaps it is only when text and image are put together that an icon of the type known to computer-users is created. The image of empty train tracks on its own is meaningless (or rather it implies too many meanings). The words 'RAIL STRIKE' contextualise the image, pinning its meaning down. (BBC Six o Clock News 5 July 1995)

Other examples might seem so straightforward. For instance, metaphor is widely use: the image of a hand locking a door was used in an item concerning the number of youngsters in prison (Channel 4 News 5 July 1995). It is often only with the help of the spoken commentary that these elements are decoded and their meanings identified. It seems that very often

> "...assumptions are made by news producers as to the audience's visual vocabulary..." (Glasgow University Media Group 1980, p. 274)

Still and moving graphics

Information graphics - both still and moving - are used in television news in a - superficially - similar way to their use in printed newspapers (fig. 3.7.6, 3.7.12 - 3.7.13). They offer the reader or viewer a contextualisation or description of a certain aspect of an item, are used to aid understanding, to get around the problems of dry, spoken explanations, or they might often seem a superficial, nonsensical, opportunistic use of computer graphics technology when they are in fact unneeded.

Graphic sequences were used in all signals, particularly in relation to the main item. The elements within these were often self-referential and/or humourous. As mentioned earlier in this discussion certain graphic soft structures can be called onto the screen by a word from the news caster.

Screen as soft structure

The television's hard structure - the screen, the common currency or medium for television news - is often used as a presentational element within a news signal and as an active element in the process of communication. The screen is refreshed at certain points in the signal: fades, dissolves, mixes, split-screens and cuts all use the screen as a soft structure.

At certain points, screens within screens appear, the caster speaking to a screen: a recognition and acknowledgment of this hard structure's importance and of the screen as a flexible soft structure. Most often, the number of on-screen screens is limited to one - through which contact with persons outside the studio is conducted - and very rarely more than one: with both

fig. 3.7.9: Channel Four news, iconic backdrop

fig. 3.7.10: BBC One o' Clock news, iconic backdrop

fig. 3.7.11: ITN 5.40 News, iconic backdrop

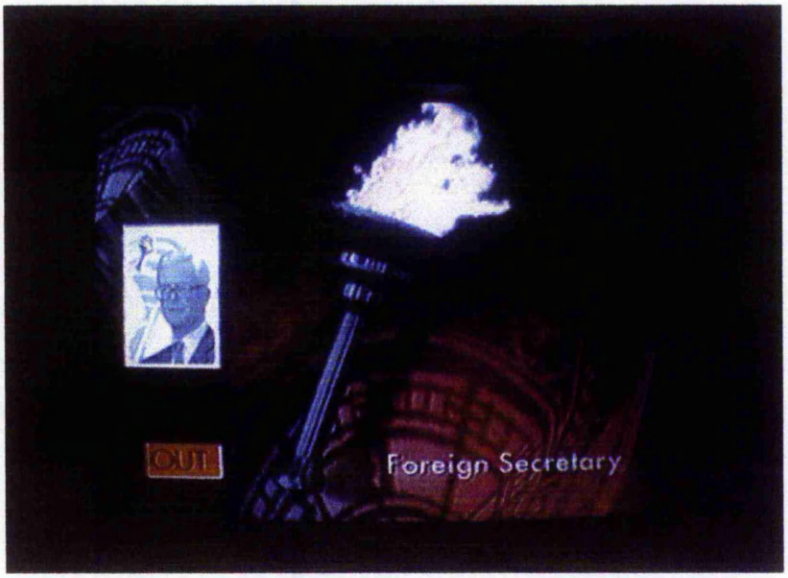


fig. 3.7.12: Channel Four news, moving graphics sequence

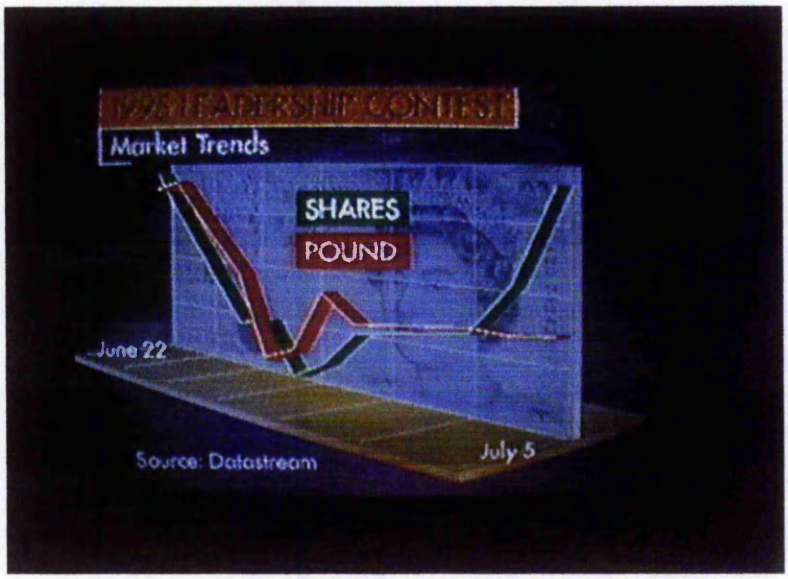


fig. 3.7.13: Channel Four News, moving graphics sequence

fig. 3.7.14: BBC Six o' Clock news, screen as soft structure

interviewer and interviewee shown speaking from two, side-by-side screens within a screen (fig. 3.7.14 - 3.7.15).

Nameplates, logos and designed identities

Television news' designed - or brand - identity is captured and continually reinforced by the use of the logo (fig. 3.7.16). By placing a logo upon the screen, a number of associations come into the viewer's mind. Whilst playing no active part in the relationship between the image and commentary, the logo implies a sense of ownership of the image (fig. 3.7.17).

The brand identity of news signals, implied by the logo is carried into opening and closing sequences where the logo is repeated. Certain colours are used in television news, also serving to 'brand' each signal; these colours and the visual styling of elements such as graphics and typography are repeated throughout a signal to reinforce its designed identity.

Visual indices

A visual index is used to signal a running order to the viewer, often accompanying a headline sequence. This soft structure presents a list of items that will be appearing in the course of the signal, and is most often used in fixed-point bulletins since they have a set running-order. The index can also be presented at a signal's end: a resumee of the most important items (fig. 3.7.18 - 3.7.20). It does this by presenting a series of images - short film fragments - at the beginning of the programme.The order in which the elements of the index are introduced reflects the order in which they will appear, their relative importance is made clear from the signal's beginning.

The visible index - a means of signalling headlines to the viewer - was used in every signal, from an announcement of headlines over moving film, to the presentation of certain items in the same space.

Date and time

News is associated and depends upon the notion of new-ness. Rolling news signals can offer the viewer the opportunity to cover an event as it happens. Fixed-point bulletins regard news as that which has happened before their transmission. Therefore, temporal positioning or placement of the signal and an item is essential in order that the viewer can be made aware of the source of an event.

By fixing signals at a point in time - one, six and nine o clock, for instance - a news timetable is created in the mind of the viewer. We know where to locate news when or if we want it: by switching the television on at certain times. Also, in the course of a signal a verbal time-check is announced, often at its mid-point, when a headline resumee is broadcast.

Items themselves are located in time (and space) in the text of an item. Casters will refer verbally to when and where an item occurred. A tag of some sort is needed to pin the item down in time.

fig. 3.7.15: ITN 5.40 News, screen as soft structure

fig. 3.7.16: BBC Nine o' Clock News, on-screen logo

fig. 3.7.17: BBC Breakfast news, on-screen logo

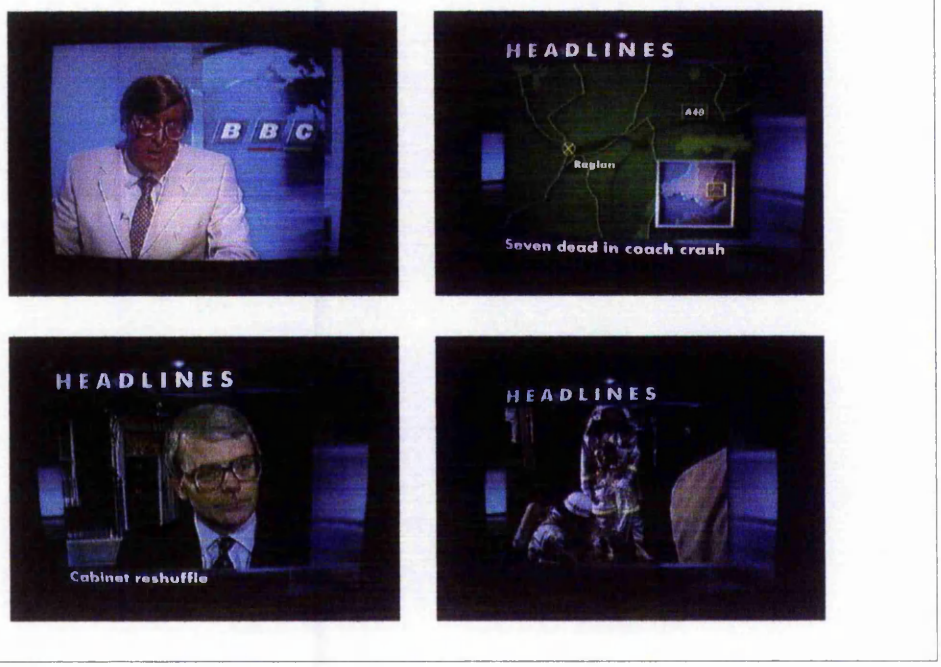


fig. 3.7.18: BBC One o' Clock news, images presented in sequence, forming a visual index (read: top left, bottom left, top right, bottom right)

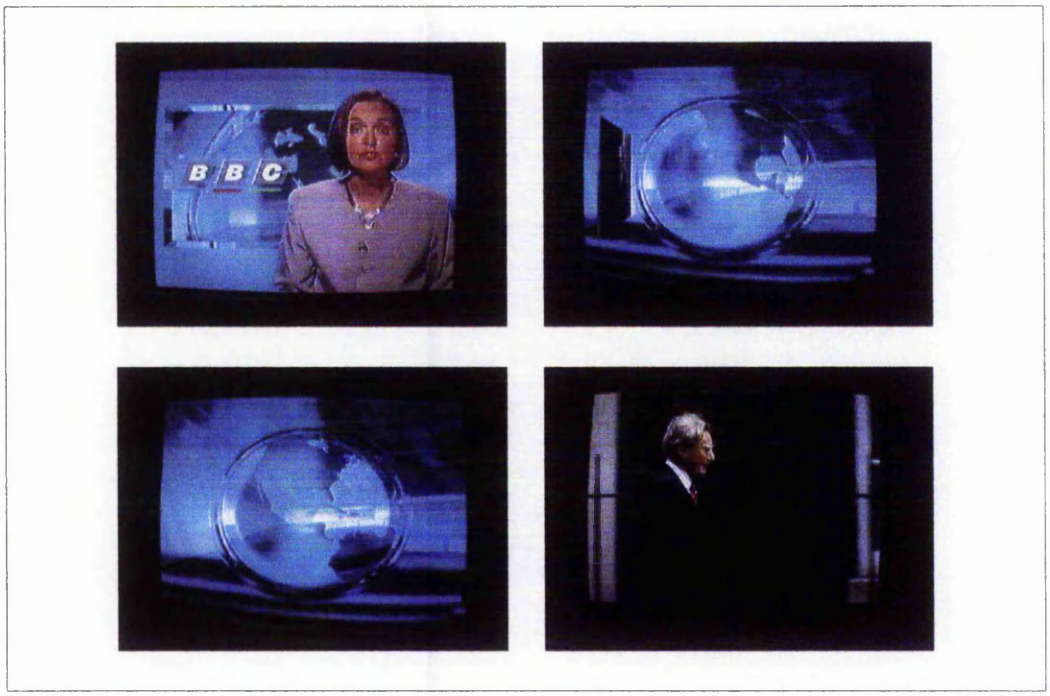


fig. 3.7.19: BBC Six o' Clock news, visual index headline sequence, framed by news-casters (read: top left, bottom left, top right, bottom right)

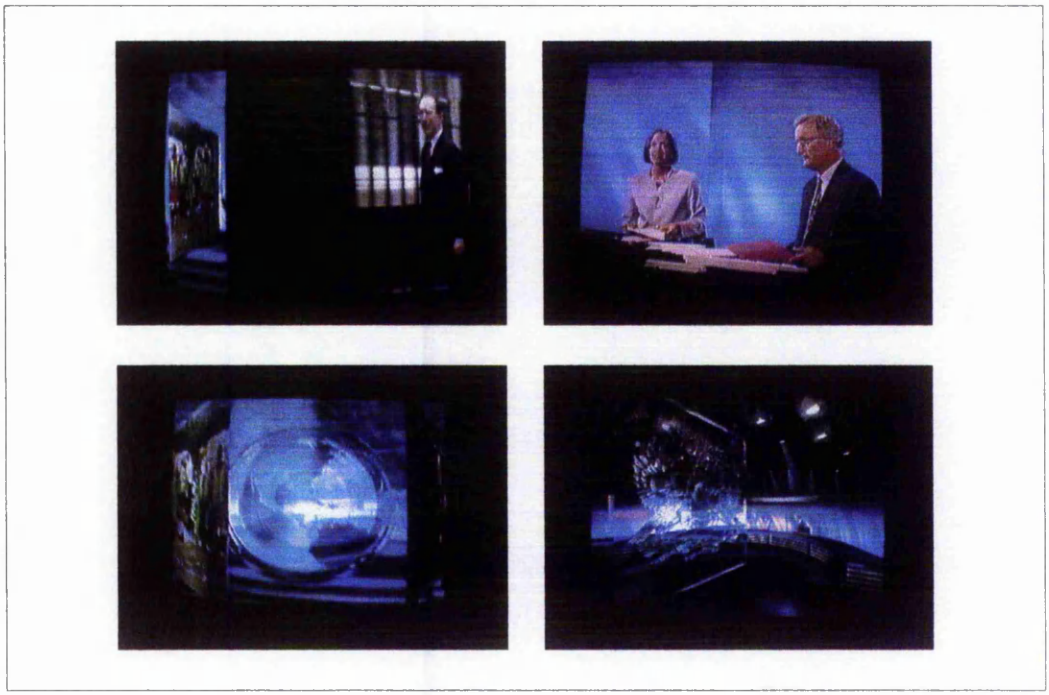


fig. 3.7.20: BBC Six o' Clock news, visual index headline sequence, framed by news-casters (read: top left, bottom left, top right, bottom right)

fig. 3.7.21: BBC Breakfast news constantly displays a clock, informing viewers of current time

Library footage is often accompanied by a caption, signalling it's time or date (fig. 3.7.21).

3.8 Soft Structures: web news

Since web news, relying on the printed word, recalls the printed page, it is no surprise that its soft structures are heavily indebted to those seen on the newspaper page.

Headlines

The headline is constant in all forms of news signal, and this use is maintained, manipulated and redefined in web news. It's importance is reflected in the size and weight of type in which the headline is presented. It's position in the space - on the screen - reflects its position in a priority of new items.

Headlines recall - through their typography - text on the page. Certain typographical limitations exist, however, mainly those imposed by the strictures of html programming language. However, web news signals in the sample have broken free of such constraints through the use of images-as-text.

One headline in the sample was an image with its typographic soft structure 'reversed' from it (fig. 3.8.1). Such a technique is seen most commonly in tabloid newspapers. In this sample, the typographic headline was generally accompanied by the body text of its associated item. However certain on-screen headlines, again like those in tabloid newspapers were presented with no or very little accompanying text (fig. 3.8.2 - 3.8.3).

Within the sample, there is also a redefinition of the headline's relationship with it's associated soft structures. Headlines - both printed and web - lead or guide the reader to an item although the distance between headline and body text is greater in the case of web news. These often had no spatial proximity, being a number of screens apart.

The headline is the connection between these elements, recurring as each link is made and reinforcing the item being read. A new relationship is founded between reader and headline, since by explicitly signalling themselves as hypertext links- active elements in the space, which once selected present the reader with information associated with that link - the reader comes to understand the new dynamism offered on the Web.

Sub headlines

Sub-headlines in this sample again followed the textual models of printed news, following the headline, smaller and offering a secondary level of information. The fragmentation of a web news item, as has been mentioned, reshapes the sub-headline.In this sample, in the space of one line, the reader was offered the item and its context in the form of headline : sub-head (fig. 3.8.4).

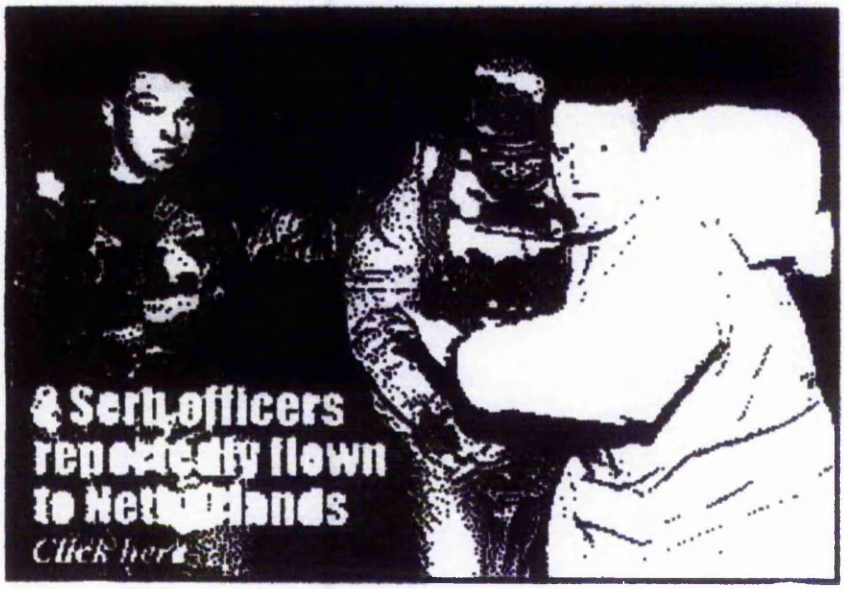


fig. 3.8.1: USA Today image with its headline reversed out

Resnick back on stand against Simpson

NEW YORK - Faye Resnick testified that O.J. Simpson used cocaine in the past and threatened to kill his ex-wife because she "rejected him, shamed and humiliated him," her lawyer said. Resnick is in the third day of her deposition in the wrongful death suits filed against Simpson. Meanwhile, sources said Monday Simpson's lawyers were strongly considering quitting the case because of Simpson's refusal to heed their advice and because of concerns he won't be able to pay all his legal bills. Simpson's lead attorneys are considering three options: leaving the case outright, leaving just during the pretrial process and returning for the trial, or continuing with the hopes Simpson will listen to his lawyers, the sources said.

- Full story

fig. 3.8.2: USA Today headline with short accompanying text

Republicans sprint for votes in Iowa

Republican presidential candidates spent the last day before the Iowa caucuses trading barbs while President Clinton, who is unopposed in the contest, called for a more civil political discourse
Full Story

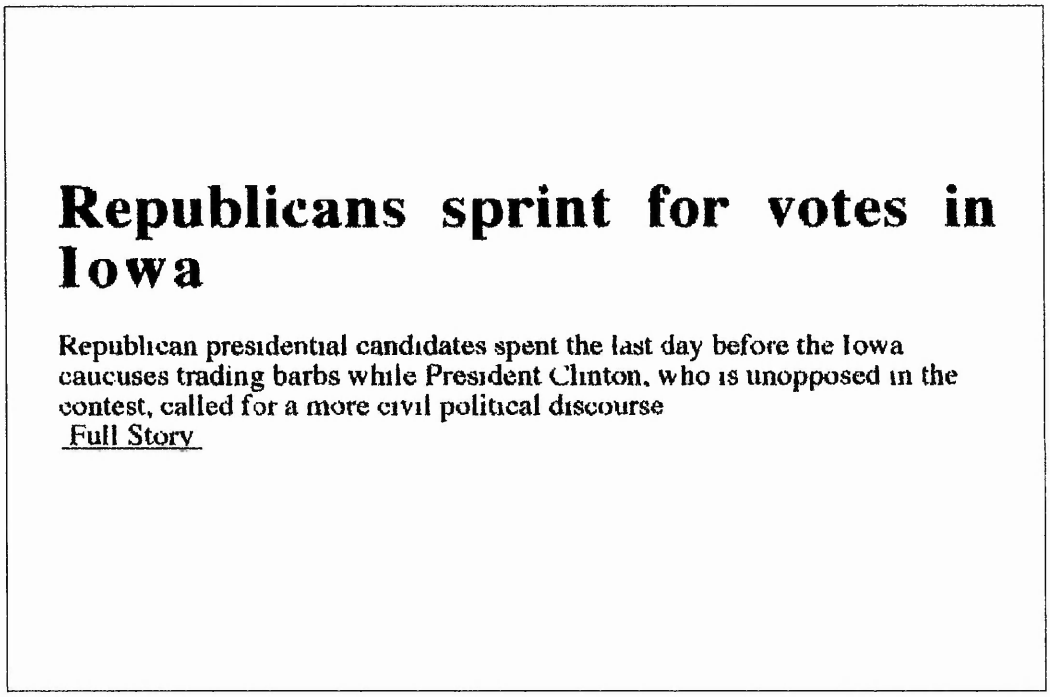


fig. 3.8.3: CNN Interactive headline with short accompanying text

Man vs. Machine: Chess fans shut out of web site
Algiers: Car bombs kill at least 17 in Algiers
Bosnia: Holbrooke in Sarajevo to salvage accord
Valentine's Day: CNN Interactive's Love Zone
Northwest Flooding: 'Things are looking up,' but Northwest flooding problems linger
Israel Elections: Israeli elections will test support for peace
Internet: Man who invented Web offers to help families censor Internet
U.S.: Mayor Barry seeks federal money for financially strapped D.C.
CNNfn: Almanac - February 12, 1996

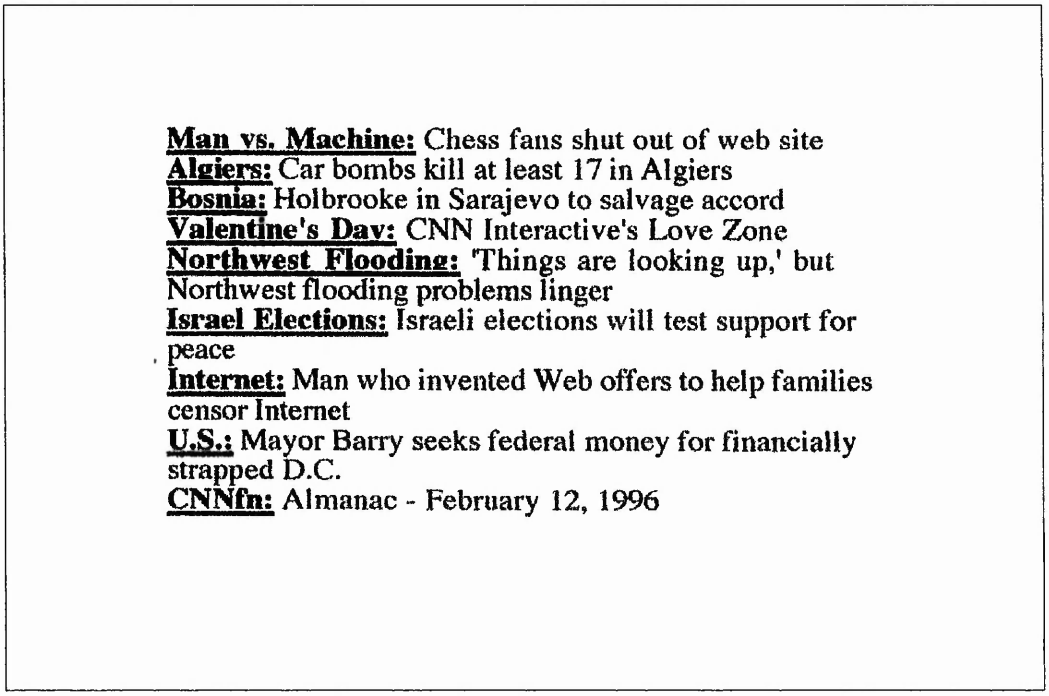


fig. 3.8.4: CNN Interactive sub-headline

Also, as items were presented in a number of reading 'stages', the length of a sub-head seemed to increase (fig. 3.8.5 - 3.8.6).

Body copy

The bulk of information presented in the sample consisted of the printed word, the primary means of information delivery. Scrollable screens of information deliver news on the Web via its visual channel: the hard structure of the screen. Within the body copy of these news items, hypertext links were often inserted, expanding the item by offering contextual connections to associated items or elements (fig. 3.8.7).

While the text of a news item is linear in content, and superficially in form, the use of such hypertext links fragments the narrative, although the connections remain potential or passive until activated by the reader: they need not interrupt the text.

Other techniques for information delivery were being attempted. Sound files were accessible via the activation of a link embedded in the copy of a news item (fig. 3.8.8). These files provided spoken recordings of speeches referred to in the text, or spoken reports recalling television news' voice-overs. The model for web news may therefore shift from a printed textual one toward something resembling television.

Byline credits

Again, this soft structure - the crediting and identification of the journalist or author of the news item - resembles that used in newspapers (fig. 3.8.9). However the fragmentation of a news item ensures that - initially - the elements or components of that item may not occupy the same physical space: the screen's 'real estate'. The byline credit for the journalist responsible does not appear until the text of the item is presented, in a number of cases, following the third link or connection.

Images

Both photographs and graphic images are present in the sample of web news. Both sets of images are used alongside text on-screen. The use of photographs recalls their employment in printed news: chiefly to signal an item's priority. A news item containing an image or series of images is one regarded as being more news-worthy.

In one instance, image and text occupied the same space, something never seen in newspapers. The element was itself the link to the item, opening a dialogue between reader and information (fig. 3.8.1).

Iconic Images

Iconic images are those accompanying a specific headline, often placed below it along or under a sub-headline. Each soft structure in the item's space refers to the other with the image taking

- **Vaughn, Red Sox Reportedly Agree to Contract**
(BOSTON, AP 02/16 ; 07:20) Mo Vaughn, last year's American League MVP, has agreed to a multiyear contract with the Boston Red Sox, three days before he was to go to salary arbitration, according to news reports.

- **Left-Hander Will Get Chance to Win Job in Rotation**
(CLEVELAND, AP 02/16 ; 07:13) It wasn't that long ago that Brian Anderson kept a poster of Albert Belle on his wall.

- **TV Report: Dolphins to Hire Beightol**
(HOUSTON, AP 02/16 ; 07:09) Larry Beightol, offensive line coach for the Houston Oilers, told a Houston television station he has agreed to become assistant head coach of the Miami Dolphins.

- **Atlanta Signs Whitfield, Designates George Transitional Player**
(ATLANTA, AP 02/16 ; 07:02) The Atlanta Falcons doled out big dollars to secure the player who's considered the cornerstone of their offensive line. Now they can turn their attention to making sure he's blocking for the same quarterback.

fig. 3.8.5: Boston Globe - 3 line sub-head

Two Serb officers reportedly flown to Netherlands

SARAJEVO, Bosnia-Herzegovina - Two Bosnian Serbs whose arrest upset the peacekeeping process were r from a Sarajevo jail Monday and flown to the Netherlands. The officers, who have not been indicted, will be interviewed by the Yugoslav war crimes tribunal. Gen. Djorje Djukic and Col. Aleksa Krsmanovic were arre weeks ago after straying into territory held by the Bosnian government, which accuses them of war crimes.

fig. 3.8.6: USA Today - 4 line sub-head

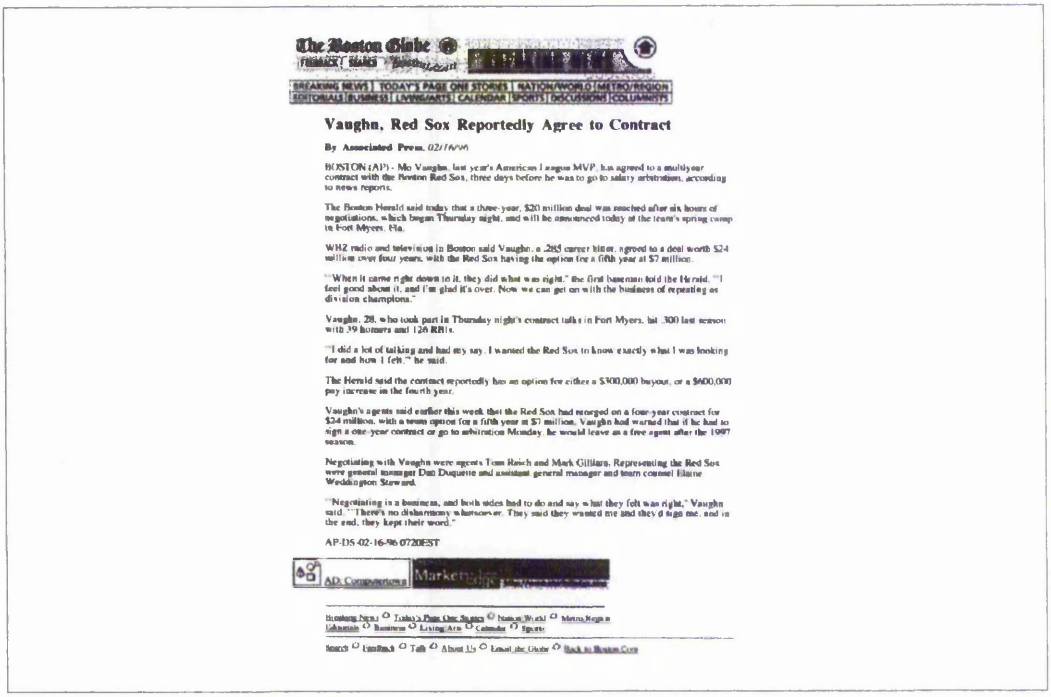


fig. 3.8.7: scrollable screens of information

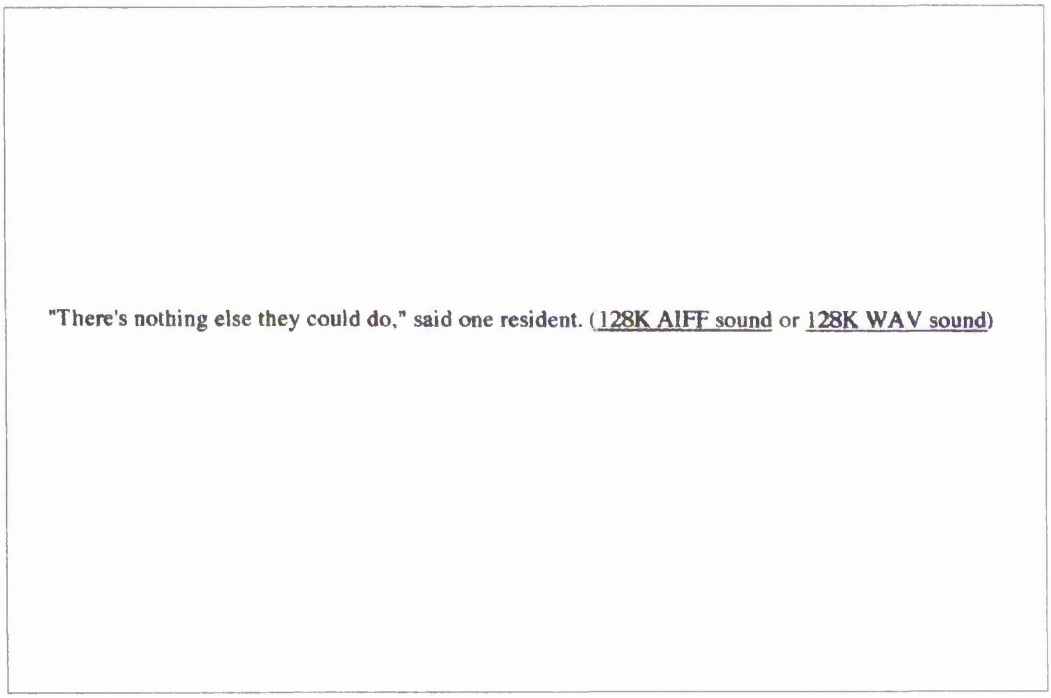


fig. 3.8.8: sound file access from body copy

February 11, 1996
Web posted at: 8:30 p.m. EST

From Correspondent Rob Reynolds

fig. 3.8.9: CNN Interactive byline credit

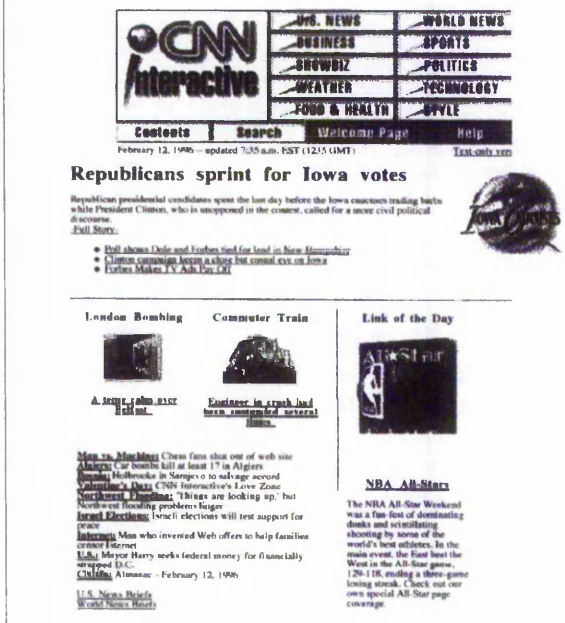


fig. 3.8.10: Left: CNN Interactive front page. Right: headline and iconic image

on an iconic function, the word and image both coming to signify the item in a similar way to the backdrop shown behind a newscaster in television news (fig. 3.8.10).

Dominant Visual Element

The front page of a web news signal, like that of a printed newspaper is often dominated by one large image, usually a photograph, although it is as likely to be a graphic image. This soft structure was seen throughout the sample (fig. 3.8.11 - 3.8.12).

The screen

While the screen is not an 'active' soft structure, the terminal-screen transmitting web news is not fixed or closed as is television's equivalent space. Limits - screen edges - are ignored by the use of software windows, allowing the user's viewable area to be resized, comparable to a conceptual self-sizing flexible newspaper page or -as some television hardware allows - the potential for viewing more than one channel at once. The plastic limits of the software window allow the reader to relocate, resize, tile or stagger a number of viewable areas.

This ability to be actively involved in a news space's hard structure is evident in no other analysis. As such it must be regarded as a key factor -or at least noteworthy in the development and study of the web's soft structures. If the viewable area can be reduced or enlarged - only up to the screen's limits - then the objects or elements in that window will either be hidden or revealed. In some cases, news signals request users to set their browser windows to specific dimensions.

Explicit Links

On the web, a link is signalled deliberately or explicitly. A coloured box around an element or coloured, underlined text supply that element with another distinct level of context. The process of making and activating electronic hyperlinks allows any element in the news space to be a potential link. Therefore, both image and text can be links; from a headline or word in the item's copy, to a photograph or a graphic (fig. 3.8.13 - 3.8.14).

What this system does is to make the methods employed for navigating and reading printed news explicit. Headlines - on the printed page - can be considered as buttons or links, connections that lead to other elements in that news item. In print, these links are subtle, their meaning implicit, their potential for navigation ambiguous. On the web these links are explicit. Their state as links is signalled blatantly to the reader as the item is read.

Electronic links signal their having been followed by changing colour. Movement of the cursor to the link makes the reader aware of it's address, signalling a destination, supplying some information about the link.

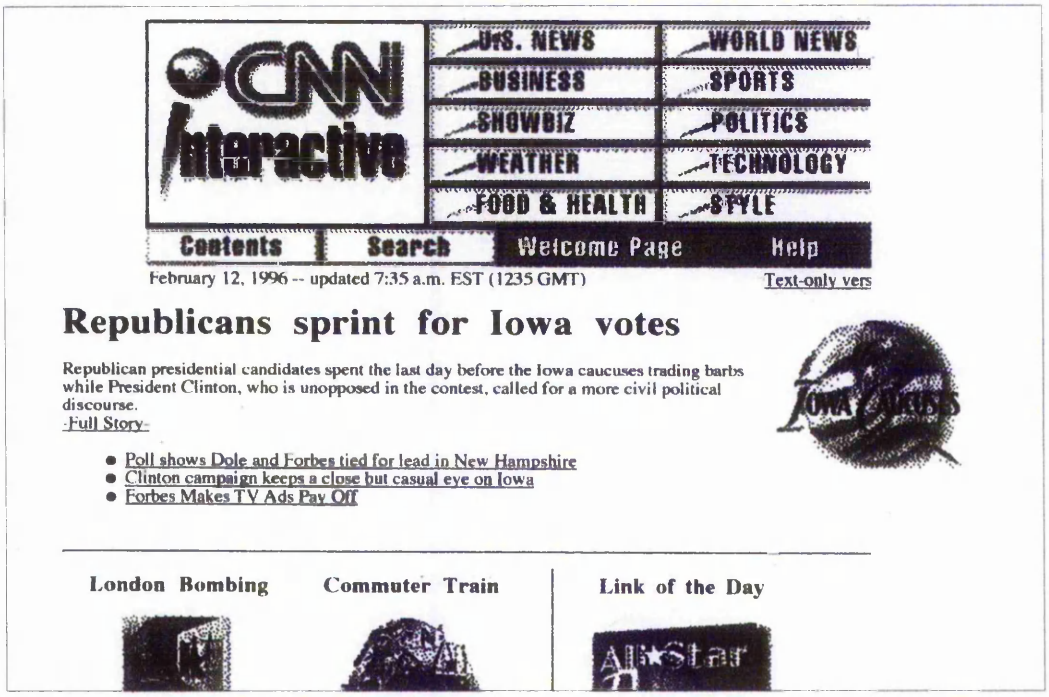


fig. 3.8.11: CNN Interactive dominant visual element

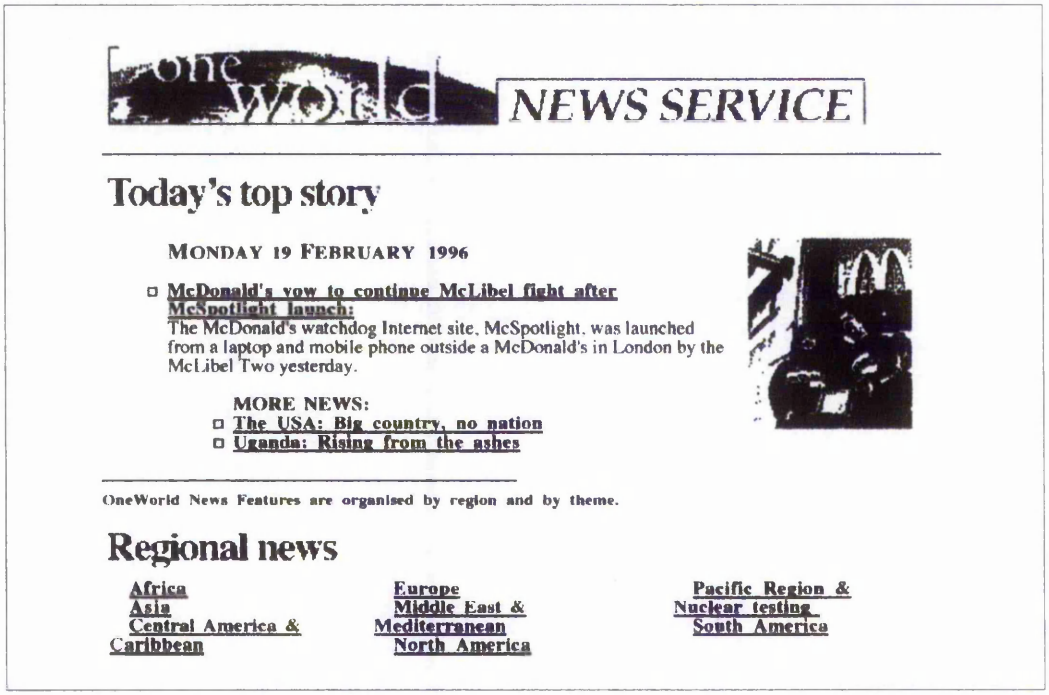


fig. 3.8.12: Oneworld news service dominant visual element

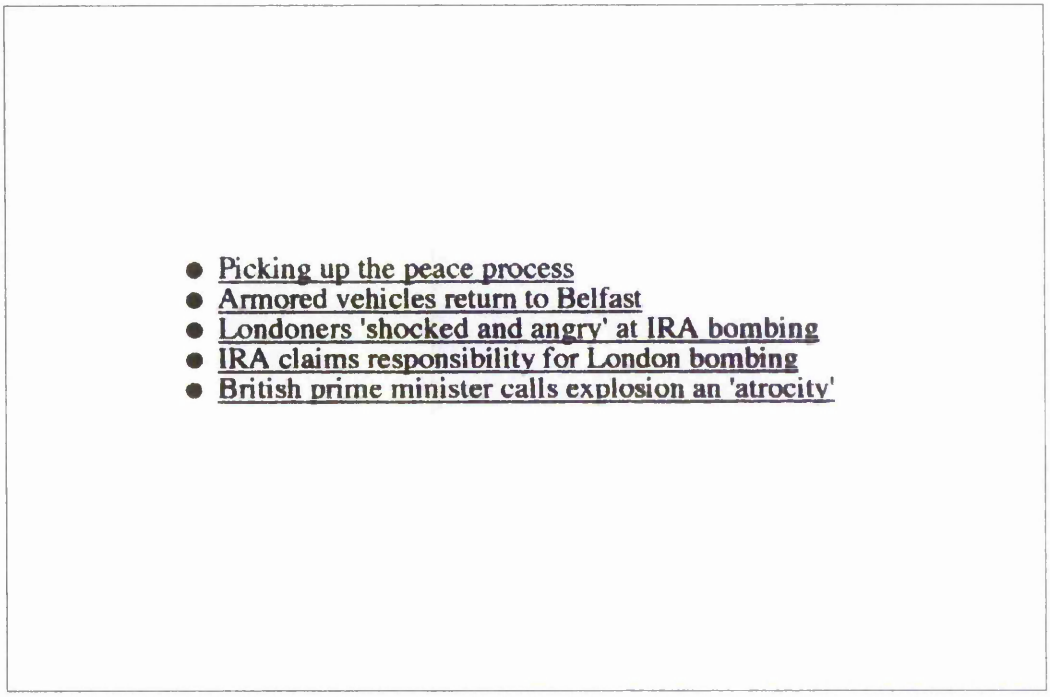


fig. 3.8.13: CNN Interactive hypertextual links

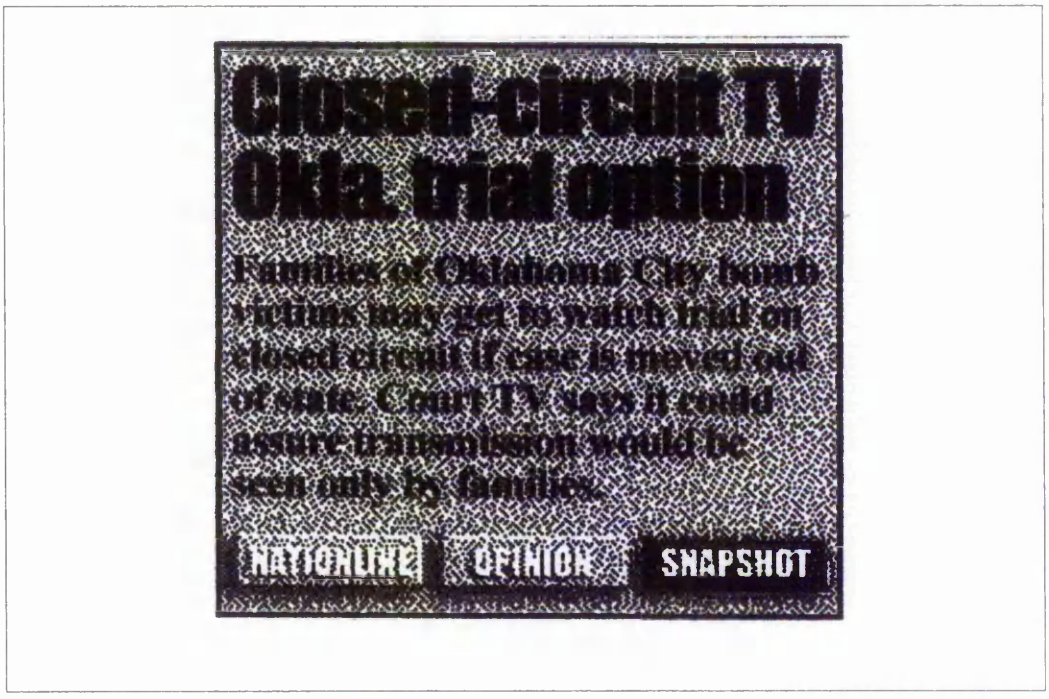


fig. 3.8.14: USA Today image as link

Columns

Certain web news signals in the sample recalled specific styles of print-based information dissemination in terms of their on-screen layout or design. The column - the vertical division of a printed page or screen - is a cliched soft structure largely associated with newspapers. Their function and role in printed news is well-documented: they allow great flexibility in navigating or scanning large amounts of printed textual information. No equivalent soft structure was used in this sample of web news although attempts were made to replicate the page-based firm structures in which columns work.

The use of columns in this sample is limited (fig. 3.8.15). However, columns are capable of presenting text on a web page, superficially mimicking the display of printed newspapers, chiefly through the use of frames as a means of splitting the screen.

Web 'pages' or conceptual structural units

The page is the most common unit of information used when discussing the web. In terms of this study, a page is regarded as a soft structure when thought of as a conceptual structural unit, and as a firm structure when regarded as a visual structural unit.

The word page is itself a cliched hard and firm structure, fixed in the reader or viewer's experience as a permanent, closed, stable, physical space and belies the flexibility, impermanence and open nature of Web pages. An onscreen news item, located on the page, can run to a seemingly infinite distance unhampered by the physical limitations of the hard structure.

Parallel readings are possible in printed news through the use of printed columns where information can be presented or browsed simultaneously. Simultaneous reading is also possible electronically through the use of links between screenfuls of information or, as mentioned, through the fragmentation of the browser window allowing the web page to become a mosaic space, a potentially open-ended or 'rolling' space, recalling both print and television news. Software windows can be placed side by side, containing information that can be read in the simultaneous parallel method.

Nameplate, section names

The most dominant visual element on the front pages of all web news signals in this sample is their nameplate. A visible name or logo is associated closely with printed news. The typography of the nameplates in the sample of web news breaks from printed newspaper's methods of presentation. In all cases, this text had a strong graphical or visual element, and often included other elements, for instance navigational aids (fig. 3.8.16 - 3.8.17).

Logotypes were used throughout the sample, most notably as an element in section identification (fig. 3.8.18). In certain web news signals, a change in section was signalled by a change in layout at the top of the screen.

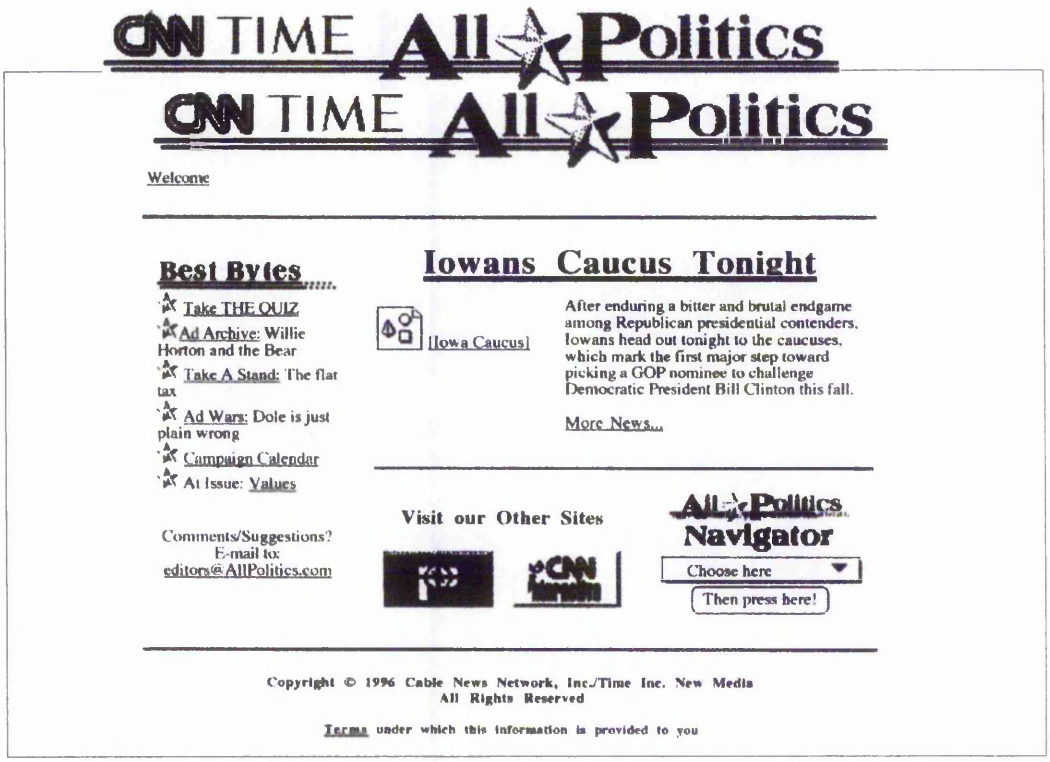


fig. 3.8.15: CNN Time All Politics use of columns

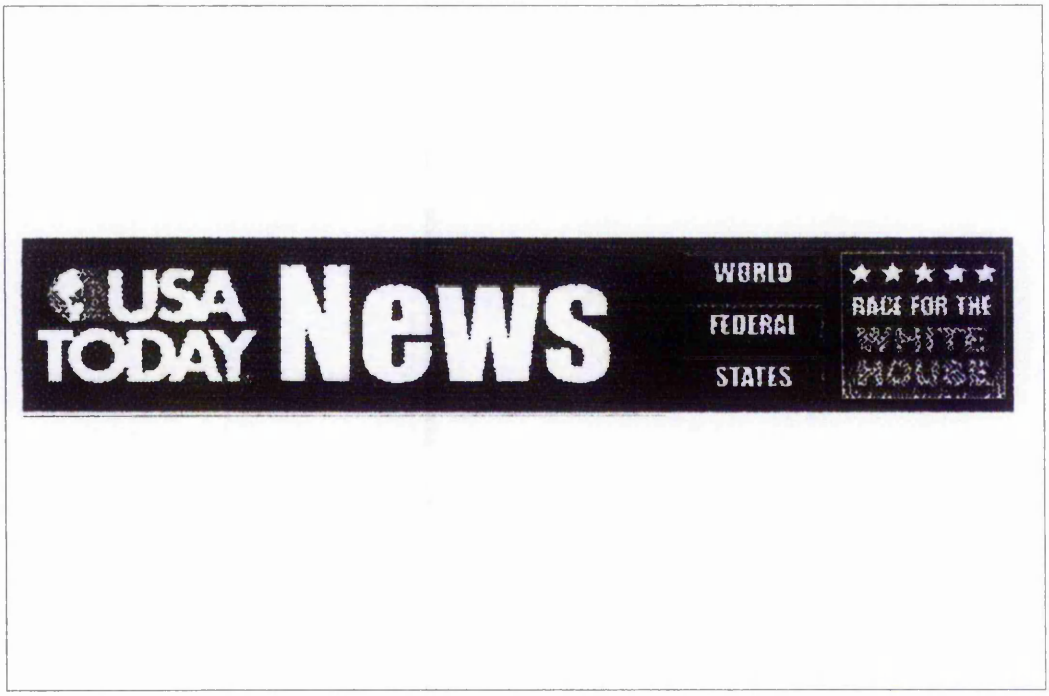


fig. 3.8.16: USA Today nameplate incorporating navigational aids

fig. 3.8.17: CNN Interactive graphic nameplate incorporating navigational aids

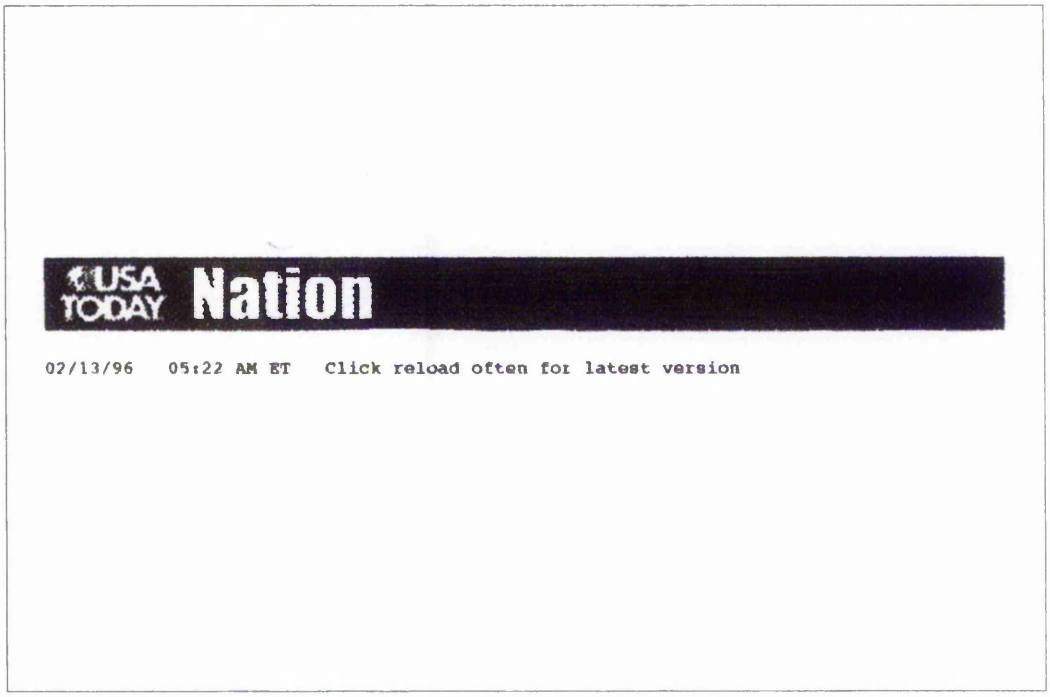


fig. 3.8.18: USA Today section identification

Visual Index

The index is a visualisation of the organised elements or sections in a Web news signal. A visual index, similar to that used in printed news, was used in a number of signals in the sample. This soft structure is necessary in such a news space, when a list of items is essential to provide information concerning content, and when - as has been examined - the reader cannot physically be presented with the news signal as a unit, and must therefore construct or conceptualise a model of it.

This index to items contained in the signal was usually included on the front page, presented graphically, either as a series of buttons, or as an icon. The visual index was also located at the top of the screen, alongside the nameplate (fig. 3.8.19). Another purely text-based index could often be found at the bottom of the screen (fig. 3.8.20). One reason why this is practiced might be that a user's screen may not present all of one item (the reader may have altered the dimensions of the screen) so two indices - at the beginning and the end of the item - are included to aid the reader's understanding and navigation of the site.

All front pages in the sample carried an index, or a link to one. This soft structure presents a number of start points to the space: links to sections, bypassing pre-set news items again aid the reader's navigation and are the opposite of a strictly linear model such as television news. This type of index is usually associated with books (contents pages) as an overview of the information available to be navigated (fig. 3.8.21).

Date and time

Electronic communications place a great emphasis on speed. News in all forms has by its nature been involved with keeping up to speed with events. The amount of time between the event and its reporting is decreasing and the news on the Web aims to address this. A sense of closure; between producer and consumer of news is being achieved with twenty four hour coverage promised.

Web news items are graded by their place in time, items with their date: a signalling system seen in newspapers. However, following the date, is something usually seen (or heard) in television news: a transmission time (fig. 3.8.9). In this case, the time that the item was posted on the Web. In all news signals, the time of transmission is signalled, the reader is notified of their place in time, one that is decreasing: in days (newspapers), hours (television) and in minutes (Web news). A gap will obviously remain - possibly in minutes - between the event and its placement in a news space.

fig. 3.8.19: Boston Globe breaking news visual index

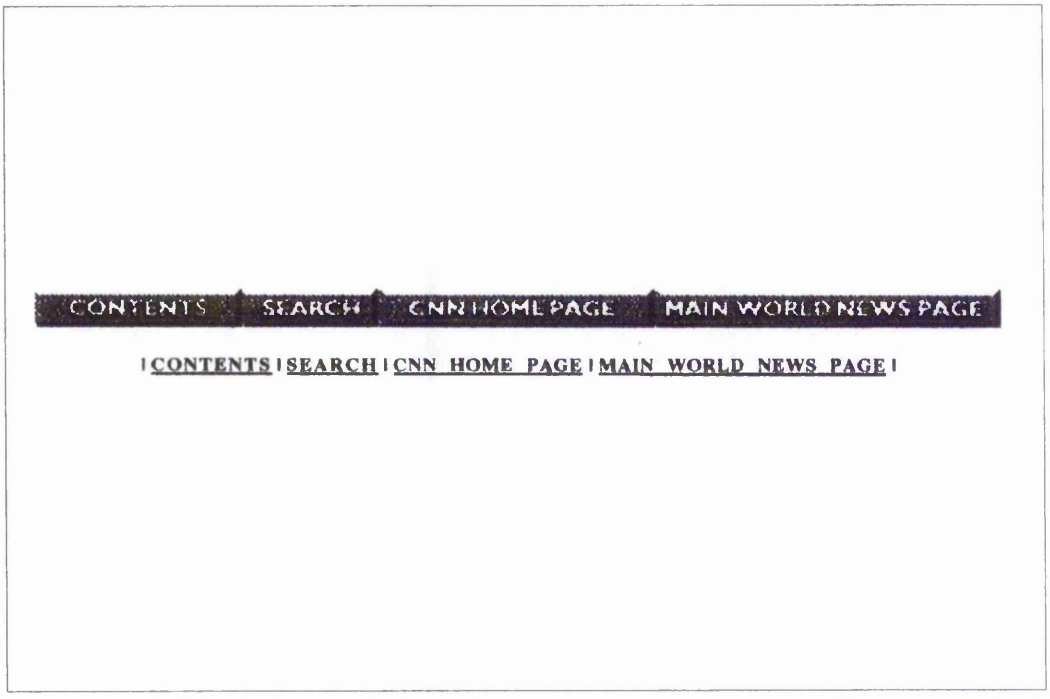


fig 3.8.20: CNN Interactive visual indices located at the bottom of the webpage

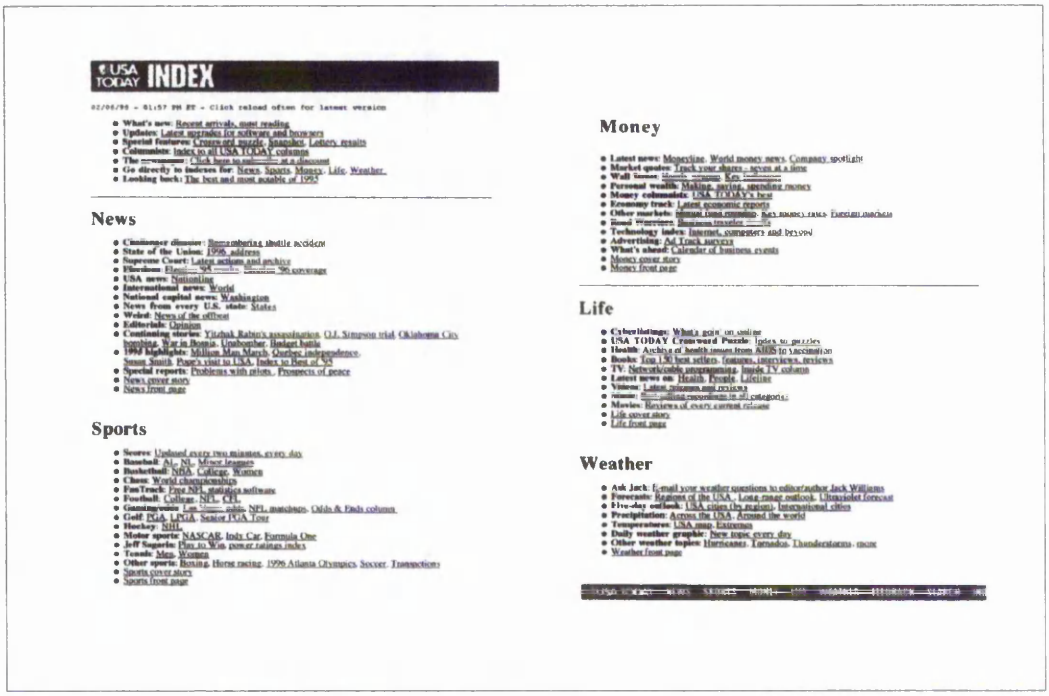


fig. 3.8.21: USA Today full site index (2 screens)

3.9 Newspaper firm structures

As has been defined, and discussed firm structures are sets of soft structures, relating directly to a news item's presentational makeup: the firm structure as a communicative unit is the sum of its parts.

This analysis and evaluation of certain firm structures uncovered in the study of the newspaper sample utilises the system of classification relating to micro and macro firm structures - as outlined earlier in this text. Within the survey of macro firm structures four distinct categories are discussed: story, section, signal and structure.

Micro firm structures: individual news items, fragmented not linear

Within this study of newspapers, it was apparent that a distinct micro firm structure was used across the sample. Specifically, this included two - and often three - soft structures: respectively, headline / body / byline. This micro firm structure is fundamental in the communication of printed news and was used throughout. (fig. 3.9.1 - 3.9.2)

Individual news items are linear, with a beginning and an end. Very rarely are they presented like this. The use of columns, for instance, breaks down traditional print-oriented narrative structures by fragmenting page widths. Columns of text are further fragmented when other elements are added. Quotes, or captions for instance are often enlarged and flowed around elements within the firm structure. (fig. 3.9.3 - 3.9.4)

Newspapers never offer a completely linear mode of reading. Reader's notions of top and bottom - in terms of space - are reoriented when the item is placed upon the page (fig. 3.9.5).

Macro firm structures:

story

One item in a news signal - most often a higher priority item - was frequently separated into a number of sub-items. These differing aspects relating to the same item were placed within close proximity of each other on the page in both the same physical and conceptual space, forming a macro firm structure I have termed 'story'

Within the sample, location of a sub-item - which was in fact a micro firm structure - upon the page signalled certain aspects of it: spatial relations between these Mi FS' communicated a sense of personality for the page. In general, the most important Mi FS within this Ma FS followed the acknowledged spatial/prioritisation system: top left equating with most important.

The placement of items within the same physical space provided an immediate - visible - link for the reader. Context or background was seemingly provided by the position of one Mi FS around or underneath another, the parallel articles producing a form of paper-based hypertext.

Tories press for time to avoid having to reveal outside fees

Patrick Wintour

TORY MPs on the special Commons select committee examining the Nolan Report are hoping to prevent MPs being required to disclose their massive earnings from outside parliamentary consultancies by delaying the disclosure process.

The group is proposing that MPs be allowed to wait until a new Register of Members' Interests is introduced next year.

Postponement would let MPs rewrite the terms of their outside consultancies' contracts so they are no longer crammed as relevant to parliamentary duties, thereby freeing MPs from the requirement to disclose their fees.

The issue is likely to be settled in a free vote on July 13. Labour has been pressing for the current register to be used from November, in line with the Nolan Committee report.

Nolan recommended that constituents had a right to know what financial benefits their MP received ... "The scale of the remuneration is, in practice, relevant to a full understanding of the nature of the service expected."

The special committee is due to report by Friday. On all the major issues the committee is likely to put forward options, rather than a single recommendation. The chief purpose has been to reframe the broad Nolan proposals into resolutions that could change the rules of the Commons.

Secrets hacker accused

A TEENAGER appeared in court yesterday accused of hacking into secret U.S. Air Force files on his home computer.

Richard Pryce, 18, is also charged with accessing systems used by missile firm Lockheed — a chilling mirror of the 1983 hit film Wargames.

Pryce, a music student from Colindale, north west London, did not enter a plea at Bow Street Magistrates Court.

He was remanded on bail until September.

fig. 3.9.1: micro firm structures: left: The Guardian
right: Daily Express

Bubbly back home

JUBILANT Tories in John Major's own back yard cracked open the champagne last night.

The chairman of Huntingdon Conservative Club Roger Juggins said: "I am very pleased. I just wonder if the men and women who opposed John will be man or woman enough to admit they are wrong so that we can unite the party."

Party agent Peter Brown added: "I am absolutely delighted. He got 66 per cent of the vote, which is more than Tony Blair did when he was elected." Tory stalwart Mike Bonas said: "John Major will unify the party. There is no doubt that he will now march us into the next general election and...we will win it."

PM's patch celebrates

Decent

Huntingdon marketing consultant Norman Standing added: "John has managed it the only way he can — the decent way." London commuters heading home last night had mixed views. Accountant Shaun Hoey, 33, from Clapham, said: "It was no surprise. I don't think they will win the election." Richard Edmondson, 46, a company director from Sevenoaks, said: "Major is a middle manager doing a chairman's job."

In Birmingham pensioner Sidney Beddows said: "I am Labour, but I thought John Major was the best of the two."

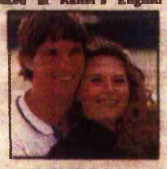
Mrs Alma Maton, 69, from Liverpool, said: "I like John Major. I couldn't stand the thought of that other fellow getting in."

fig. 3.9.2: micro firm structure: Daily Mirror

WIMBLEDON warfare broke out again last night—with doubles champions Mark Woodforde and Todd Woodbridge in the thick of it.

Their quarter-final clash with fellow Aussies Patrick Rafter and Mark Philippoussis ended in fierce exchanges.

Trouble flared after Woodbridge shouted at Rafter's English girl-



MIXED DOUBLE: Rafter and girlfriend Alexandra Dickson

friend, Alexandra Dickson, to shut up. She had been giving heart-throb Rafter loud support but as the champions completed a 6-2, 1-6, 6-2, 7-6 victory she left the stand in tears.

There was finger-wagging and abuse amid the players' traditional handshakes and Rafter left the court without collecting his bag. When he got back to the locker-room there was another exchange of abuse.

"I guess she was pretty upset her beau had been beaten," said Woodforde.

Nick Philippoussis, father of 18-year-old Philippoussis, also launched an astonishing tirade against a friend of Alexandra Dickson in the players' box.

Philippoussis has a growing reputation as a domineering figure in the life of his son, last year's junior Wimbledon singles finalist and winner of the doubles. The row between the Australians is the

Page 59 Column 7

mother was so confused when asked if she agreed to being moved she thought she was going back to her own home.

Another witness described how an 85-year-old resident who did not want to move had her belongings packed and was being transported in a mini-bus to another home. She clung to a handrail in the bus, crying in distress "why me?"

Today Wandsworth council

An 85-year-old clung to the bus handrail crying 'Why me?'

social service officials intend to close the home officially and move all who have not positively refused permission to another home. The rest have been told they can stay in one section of the home while the rest is boarded up.

Lawyers representing some residents of George Potter House have been fighting closure in the courts and last week the Court of Appeal decided that councils do not have a duty to provide an element of local authority provision.

On Monday the Wandsworth

fig. 3.9.3: fragmented columns: left: Daily Express
right: Independent

here is Alan Clark, the maverick politician, diarist and lothario. There is Andrew Roberts, the rusting young historian and a y member of John Redwood's am. There is Dr John Charmley, e bow-tied, Bunteresque historin, and there is Lord Blake, the uthor of the magisterial history of e Conservative Party.

This colourful assortment of haracters will come together next uesday to take part in *The imes*/Dillons debate n Winston Churchill. harmley supported y Clark will argue at Churchill's faith in special relationship ith America was misaced. Lord Blake, acked by Roberts, will ppose them.

All the debaters are ddicted to controver-y. A day scarcely goes y without Clark popng up in the headnes, be it for his nvolvement in the rms to Iraq affair, his eferences to "Bongo Bongo land" r his relationship with the wife nd two daughters of Judge arkess. Roberts, 32, who lives the fe of a country squire, employing butler for his dinner parties and ommissioning a portrait of himelf, last year published *Eminent Churchillians*, a collection of essays which claimed, among other things, that Churchill was a racist.

Charmley regularly rocks the boat, claiming in his first book, *Churchill: The End of Glory*, that our war leader should have negotiated peace with Germany in 1941. In his latest work, *Churchill's Grand Alliance*, he addresses the topic of the debate, saying that Churchill sacrificed British interests for the sake of luring America into the war. Only Lord Blake, 78, the former Provost of Queen's College, Oxford, and tutor of the undergraduate Clark, can be regarded as a custodian of the status quo.

'America had to come in. It did not need bribes'

Apart from their flair for publicity, the debaters are united in their politics: "It's difficult to work out which of us is the most right-wing," said Roberts, faintly, over his mobile telephone at the Redwood HQ just before yesterday's ballot results.

Right-wing does not necessarily mean traditional. These men are concerned with reappraising the reputation of British history's most sacred cow. "A lot of historians who have looked at all the facts are a bit uneasy about Churchill's heroic status," says Clark, who is

fig. 3.9.4: The Times, fragmented columns

4 THE SUN, Wednesday, July 5, 1995

MAJOR 218 REDWOOD 8

SHARES TO LEAP £6bn OVER VOTE'

By ISABELLE MURRAY, City Editor

SHARE prices are set to rise when the Stock Market opens for business today.

Up to £6billion is expected to be added to the value of top companies in the wake of John Major victory.

The election result came too late to affect yesterday's Stock Market.

But the leading FTSE-100 index added 25 points, worth £5billion, as City traders looked forward to the end of political uncertainty.

The Pound immediately strengthened against both the German mark and the dollar.

When Mr Major announced the leadership vote the Pound plunged and the Stock Market lost billions.

Economist Jonathan Loynes of Midland Bank said: "The main reaction on the markets is relief that we won't have to go through a second vote.

"The Pound has already reacted positively and all the other markets are likely to be healthy too."

Aitken out

From Page One

wanted to concentrate on fighting two libel cases against The Guardian newspaper and World in Action.

Mr Aitken, 52, said he faced working up to 16-hour days, leaving no time to form his case.

The MP for Thanet South, Kent, has been at the centre of allegations over his links with Middle-Eastern businessmen and a dispute over a bill from the Ritz Hotel, Paris.

Mr Aitken is a right-winger but supported Mr Major for leader.

A friend said: "Jonathan is determined to win this legal battle and take a lot of money from those who have libelled him.

"He wants to clear his name and leave the way open to get back into government and not be a distraction to Mr Major's efforts to unite the party."

Another close friend said his resignation was "in no way" linked to false allegations about his private life which have been circulating in the House of Commons.

fig. 3.9.5: The Sun, reorienting notions of top and bottom

Tension and tetchiness over voting fair play

as MPs filed through the corridor of power

Losers turn defeat into a victory

Three smiling Michaels in search of cabinet role

NOT YOUR COMMON GARDEN SHOW.

Sun

TIME TO DITCH THE CAPTAIN

ON YOUR BIKE JOHN

"The good news is confirmed!"

Tory papers face dilemma after backing loser

Blair predicts only short term gains

fig. 3.9.6: The Guardian, macro firm structure (story)

A definite distinction between tabloid and broadsheet can be made in the study in terms of both amount of space given to an item and the number of Mi FS' within a Ma FS of this type (fig. 3.9.6 - 3.9.7)

section

Sectioning of a newspaper's content into specific themed areas of related material creates larger Ma FS, which for this analysis are termed 'section'.

A typographic signifier was used to signal and title these macro firm structures, and was most often appended to the top of a page. Common section names in this study included 'Leadership Election', 'Home News', 'International News', 'Business', and 'Sport' (fig. 3.9.8 - 3.9.9). Within these sections, content was organised in terms of the spatial/prioritisation system as discussed above.

Certain key soft structures ran across sections, throughout the newspapers, on each page. These included the date, the newspaper's name and page numbering.

signal

Newspapers - as artifacts - are constructed from distinct structural units, from page to double-page spread, section and the news signal as an object in its own right. As discussed, each structural unit can be equated with specific macro firm structures which can be applied to it.

The act of reading a newspaper can be regarded as an act of creating macro firm structures - collecting other firm structures - according and responding to a reader's personal interests or individual systems of news priorities. In this instance, the reader constructs a 'signal' macro firm structure from those Ma FS' presented within the signal, reconstituting the news within the n-space.

Certain soft structures aid the reader's manufacture of the signal Ma FS: dominant visuals (or 'attention devices') and forms of indices. Within broadsheet newspapers, the most important visual element is positioned above the fold. "The (dominant) visual becomes a magnet, pulling in readers." (Finberg and Itule 1990, p. 45). The dominant visual was used throughout the sample (fig. 3.9.10 - 3.9.14)

As outlined in its discussion as a key soft structure, the use of indices aids effective navigation of the signal. They are also essential in terms of reader construction of this Ma FS (fig. 3.6.40).

structure

This Ma FS is concerned with the newspaper's hard structure used as a discrete, significant structural unit. The most notable instance of this in the sample was the front page. This Ma FS is seen to encapsulate the newspaper's character. Previous studies have made use of the front page as a means of signalling the newspaper's design strategy (Finberg and Itule 1990 and

fig. 3.9.7: Daily Express, macro firm structure (story)

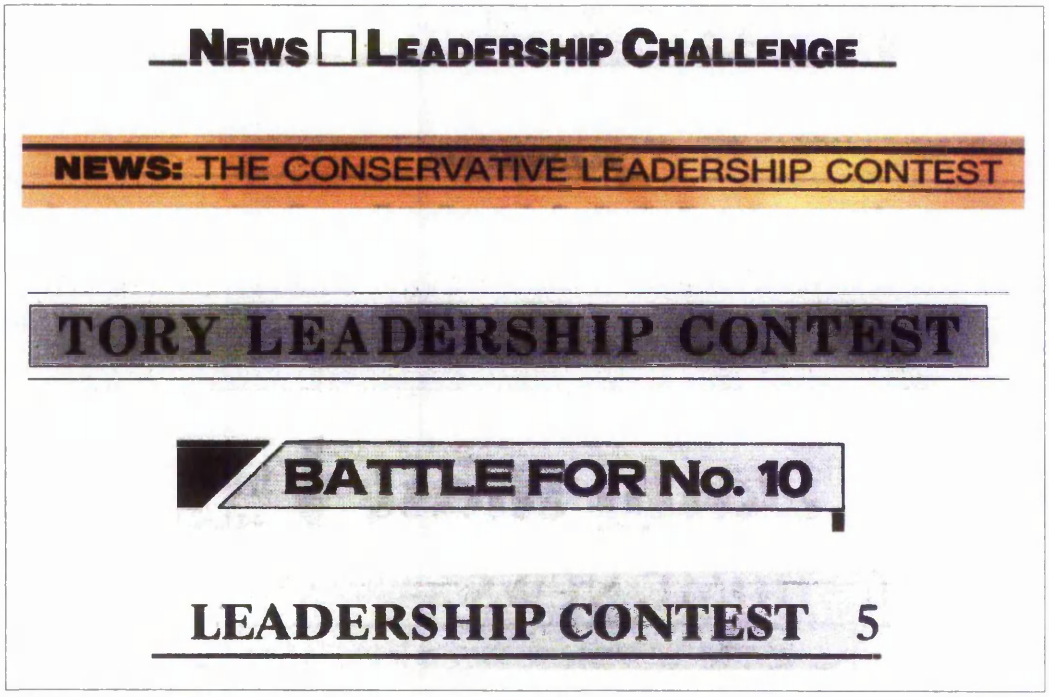


fig. 3.9.8: macro firm structure (section), section signifier:
from top to bottom: Daily Express; Financial Times; Independent; Daily Mail; The Times

HOME NEWS 11

FOREIGN NEWS

fig. 3.9.9: macro firm structure (section) section signifier:
top: The Guardian; bottom: Daily Telegraph

fig. 3.9.10: newspaper front pages: left: Daily Express; right: Financial Times

fig. 3.9.11: newspaper front pages: left: The Guardian; right: Independent

fig. 3.9.12: newspaper front pages: left: Daily Mirror; right: Daily Telegraph

fig. 3.9.13: newspaper front pages: left: The Sun; right: The Times

fig. 3.9.14: newspaper front pages: left: Today

Evans 1973). Finberg and Itule (1990) define the front page as "...the main news page, the lead page, the window to the rest of the newspaper." (p. 41)

Each front page sets the newspaper's philosophy, its style and its ideals of newsworthiness in one macro firm structure, presenting a range of items. There were certain constant features on the front pages of both tabloid and broadsheet newspapers in the sample. The most common typographic elements of this Ma FS were the nameplate, overline or promotional boxes, summary boxes or briefing columns, headlines, bylines, columns, refer boxes or lines, datelines and captions. A number of these soft structures were formed into distinct micro firm structures within this Ma FS.

Newspaper's nameplates were always included at the top of the page, either centred or aligned left; overline boxes were located under or on top of the nameplate and informed the reader about particular items within the signal; the index was usually located at the bottom of the Ma FS. The position of each of these elements was constant for each signal: they rarely moved - in terms of individual signals - from day to day, their location an obvious aid to navigation (fig. 3.9.10 - 3.9.14).

3.10 Television firm structures

As has been outlined, firm structures as organised systems or networks of representational soft structures whose use is as much defined by historical convention as by deliberate construction. MacGregor (1997) discusses the familiar model of television news - the firm structure or structures - and its historical development.

These constructions - through time, accommodation and recognition - become familiar to the reader/viewer/user, although to what explicit degree is debatable.

Micro firm structure

As has been made clear, a micro firm structure is a configuration of soft structures used in the communication, organisation and visualisation of one news item. Within the sample of television news, the fundamental Mi FS was the film report.

A report can be assembled from a wide range of soft structures. Within the sample, the amount used ranged from two to fifteen. This Mi FS could often be simple - in terms of their organisation - presenting, for instance, a narrated graphic sequence (fig. 3.10.1). Likewise, more complex film reports could combine graphic sequences, captioning, voice-overs and talking heads with each of these soft structures repeated a number of times in the report.

In many cases, the film report was bookended by a correspondent's introduction or summary. Often, it supplied recorded 'actuality' in the form of short filmed sequences.

fig. 3.10.1: Channel Four news, micro firm structure - news item - consisting of only two elements

fig.3.10.2: ITN 5.40 News, synchronous talking head

In the case of television news, a further Mi FS can be discussed: the synchronous talking head. This combined visual and verbal Mi FS presents the news-caster, seemingly speaking directly to the viewer. As mentioned above, it is often used as a 'bookending' device. Soft structures used in this Mi FS are the authoritative talking-head, the iconic backdrop, the station ident. or logo and synchronous speech. This Mi FS combines a static image with fluid, spoken narrative flow. (fig. 3.7.8 - 3.7.11, 3.10.2 - 3.10.3)

The synchronous talking-head was used in all news signals, in various configurations. In one instance a typographic headline was included against the news-caster and backdrop, becoming an integrated aspect of the iconic backdrop.

Macro firm structures

story

As has been discussed with regards to printed news, important or lead news items are often fragmented into several distinct or discrete reports or sub-items. Numerous examples in the sample illustrated the queueing or sequencing of firm structures - centring around one primary or lead item - into a complex network of firm structures forming a 'story' macro firm structure.

Important news items are allocated more space in the news signal, and its position in a sequence of items (micro firm structures) also indicates its position in this hierarchy.

For instance, one item made use of thirteen micro firm structures in a sequence. Some were repeated in the course of the item: the synchronous talking head (news-caster against iconic backdrop) was used three times. A pattern was discernable, with the talking head acting as an linking or bridging element between distinct micro firm structures. Also, graphic sequences were used as introductory devices leading to narrated film reports (fig. 3.10.4 - 3.10.6).

section

Two distinct forms of this macro firm structure were apparent in the study. First, in the case of special events taking place and being presented through a television news signal, content was structured and signalled clearly though the use of an iconic backdrop. Similarly, within the sample, certain signals streamed content into specific themed areas such as 'Business news' and 'Sport' (fig. 3.10.7 - 3.10.9).

The 'section' macro firm structure was not signalled explicitly within the sample of television news, in general. However, an implicit understanding of this form of organisation was made clear with the news-caster often verbally signalling a change in content and focus, often using terms such as "Today's other news" and so on.

In terms of clearly signalled sectioning - as a form of macro firm structure - television news signals may be regarded as more fluid and dynamic than printed news in terms of their sense of overarching, global structure. However, rolling news signals - one form of this was included in

fig.3.10.3: BBC One o' Clock news, synchronous talking head

fig. 3.10.4: Channel Four news, macro firm structure (story). Top left: synchronous talking head; bottom right: moving graphic sequence; top right: synchronous talking head; bottom right: moving graphic sequence

fig. 3.10.5: Channel Four news, macro firm structure (story). Top left: nominated, captioned speaker; bottom right: synchronous talking head; top right: moving graphic sequence; bottom right: still graphic sequence

fig. 3.10.6: Channel Four news, macro firm structure (story). Top left: nominated speaker bottom right: still graphic sequence; top right: synchronous talking head; bottom right: live two-way

fig. 3.10.7: Channel Four News, macro firm structure (section): signalling business

fig. 3.10.8: Channel Four news, macro firm structure (section): signalling weather

fig. 3.10.9: ITN 5.40 News, macro firm structure (section): signalling 'And Finally'

fig. 3.10.10: BBC Leadership Election Special, macro firm structure (structure): the screen as a presentational element

the sample - had a clearer, fixed schedule with a definite macro firm structure.

signal

The most distinct form of the 'signal' macro firm structure to be present within the sample was the headline sequence/round-up sequence, offering the viewer a summary of the most important items. Similar to the use of visual indices, this Ma FS previewed the main content of the particular news signal and was often repeated at the signal's end.

Since television news takes place in time, this 'signal' Ma FS makes the signal's news agenda explicit by editing key news items into a particular sequence, combining the synchronous talking head and authoritative, institutional voice (fig. 3.7.18 - 3.7.20). In one instance, this Ma FS was made more explicit, presenting images representing four key news items in the space behind the news-caster (fig. 3.7.7).

This Ma FS acknowledges the finite nature of the television news signal. Being positioned at the beginning and the end presents what is to follow and what we have seen, respectively.

structure

This Ma FS is concerned with the television's hard structure used as a discrete, significant structural unit. As was made clear in the discussion of television's soft structures, the screen as the medium of this news signal was acknowledged in the sample.

Macro firm structures of this type were not readily apparent in the sample. Two notable variants were available for study, however. In one instance, the screen was self-consciously used as a means of displaying information to both viewers and studio-bound news-caster in a specially constructed wall of monitors used in a news special to cover a particular event.

This wall consisted of fifteen screens, grouped together to form a grid structure. Many presentational permutations were possible within this framework. The most regular was the use of the left-most nine screens as a larger monitor and the remaining six showing a variety of images: views of other locations or programme logos (fig. 3.10.10).

Another instance of television acknowledging its hard structure within an organised macro firm structure was in certain instances of two or three way link ups. The interviewer - often the news-caster - is situated in the studio and the interviewee - a reporter or nominated expert - is at a location outside.

In the course of a live two-way, for instance, the caster is seen to speak to the interviewee through a window or screen located at a point in the studio, often giving the impression that both interviewer and interviewee are in the same space and that a seamless conversation is taking place. (fig. 3.10.11)

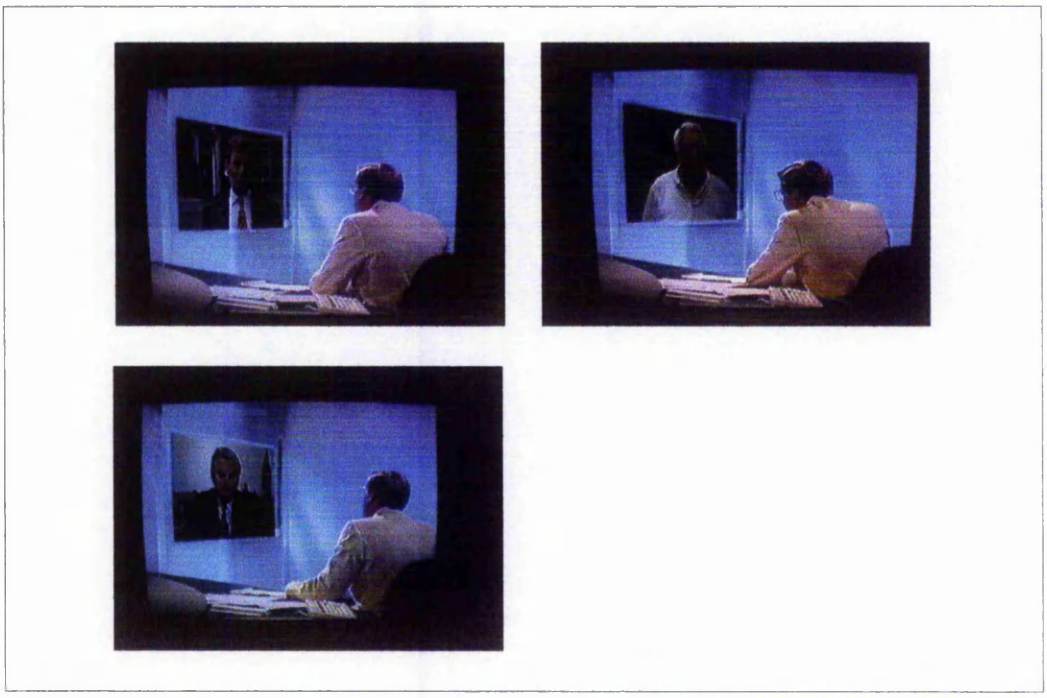


fig. 3.10.11: BBC One o' Clock News, macro firm structure (structure): two-way link-ups with the screen as an active presentational element

fig. 3.10.12: macro firm structure (structure): two-way link-ups, with the screen as active element. Top left: ITN 5.40 News; bottom left and top right: BBC Breakfast news

Similarly, two talking heads are often viewed on-screen - each within a screen - as an interview takes place. A common editing structure within the examples in the sample presented both interviewer and interviewee on-screen when a question was asked, and the interviewee occupying the full-screen when offering an answer (fig. 3.10.12).

3.11 Web firm structures

As has been outlined, this study defines firm structures as organised systems - particular constellations - of soft structures, whose use aids both producer and consumer in the effective communication, navigation and understanding of the particular news space.

Unlike the two other samples in the news analyses, Web news has limited historical precedent in the implementation of its firm structures: electronic news seems to have not yet developed an idiosyncratic visual language, one that utilises fully the potential or promise of electronic communications.

Instead - and this observation is borne out by the brief discussion of Web news' soft structures - the firm structures in use in Web news signals often mirror their television or newspaper counterpart. Therefore, a number of links or connections can be made back to the previous two analyses. In the course of this enquiry these links will be made explicit and discussed.

Firm structures, therefore, are regarded as cliches of communication, whose use gives form to a news text. Alongside being recognised as best practice, these firm structures present to the reader a link with the past; to previous systems of news dissemination.

Hypertextual firm structures

One key aspect of the sample of web news signals was the facility of the reader/viewer/user to seemingly create firm structures. It was possible to select items from lists, indices or directories and, following these connections, create a firm structure for the item currently being consumed.

This particular ability mirrors that presented by the mosaic n-space of printed news. However, in the case of web news the production of firm structures is explicit in terms of its construction and presentation. In this respect, web news offers users a degree of personalisation in that items are not only consumed in an order dictated by whoever reads them, but also offers any user the potential to construct them - in certain cases - according to finer variables.

It should be recognised that items in the web n-space aren't juxtaposed in a traditional, linear sense. Rather, items are often presented to the user as a series of links, although an order of reading is often implied or suggested. The links themselves, however, are plastic: their respective firm structures reshaped by each reader/viewer/user.

In the sample of web news, there seemed an apparent lack of explicit visual guides to an item's hierarchical position, specifically with regards to headline size. This deficiency could be regarded

as an implicit recognition of their lack of importance - in this n-space - for signalling priority, with this responsibility moving towards the signal's reader/viewer/user.

Recognised news cliches, while still reflecting content, seem to lose their context-provision. A headline's explicit indication of priority, for instance, could be subverted through the user's active ignorance. Editorial signals could become disconnected, or at least their effects lessened, if provision of personal choice was extended.

Navigating web news - and the assembly of its respective firm structures - depended, therefore, upon the efficient organisation of hyperlinks. In communicative terms, local positioning of items implied a similarity of content. Most frequently within the sample, this range of organisation ran from global to local, with a subsequent narrowing of content.

Micro firm structure

The micro firm structure follows that outlined in the previous analyses of television and printed news wherein a low-level news item is presented clearly and with often a minimum of component soft structures. Each component can be regarded as a fragment of the micro firm structure, and mirroring printed news, micro firm structures were often simply defined.

This notion of fragmentation of a micro firm structure was extended in the web n-space through a fragmentation between screens (fig. 3.11.1). Often, one item was presented as a headline only, or a headline and a summary, or accompanied by a series of links. Each presents the reader with a predetermined path to the item, as the Mi FS is constructed along each step. The notion of an isolated Mi FS - as discussed previously in this text - is therefore reconfigured in the web n-space.

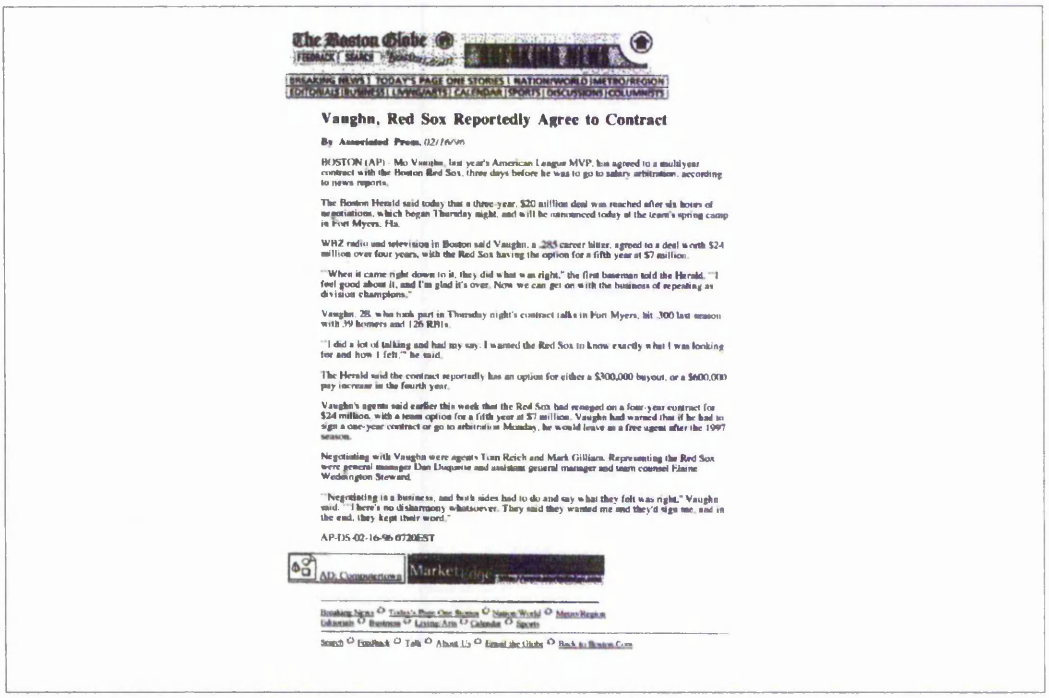
A seemingly simplistic micro firm structure can often contain a complex underlying network of connections. For instance, each typographic element or soft structure acts as a hyperlink to other elements such as sounds, or even contextual connexions to other items within or outside the news signal. Likewise, images can often contain or integrate typographic elements whose function might be hypertextual.

Macro firm structure:

story

The 'story' macro firm structure is composed of a number of smaller sub-items, reflecting and communicating that item's importance. Within the sample, this Ma FS was fragmented over or between a number of screens of information, alongside being fragmented on the screen into a firm structure that resembled the mosaic presentation of items on a newspaper page. It is worth noting that, in general, the number of sub-items within this analysis was less than in the main item in the two preceding analyses.

The sub-items of the main item were often reports detailing aspects of it. In certain instances



The Boston Globe

FEEDBACK | SEARCH

BREAKING NEWS | TODAY'S PAGE ONE STORIES | NATION/WORLD | METRO/REGION | EDITORIALS | BUSINESS | LIVING/ARTS | CALENDAR | SPORTS | DISCUSSIONS | COLUMNISTS

Vaughn, Red Sox Reportedly Agree to Contract

By Associated Press, 02/16/96

BOSTON (AP) - Mo Vaughn, last year's American League MVP, has agreed to a multiyear contract with the Boston Red Sox, three days before he was to go to salary arbitration, according to news reports.

The Boston Herald said today that a three-year, $20 million deal was reached after six hours of negotiations, which began Thursday night, and will be announced today at the team's spring camp in Fort Myers, Fla.

WHZ radio and television in Boston said Vaughn, a .285 career hitter, agreed to a deal worth $24 million over four years, with the Red Sox having the option for a fifth year at $7 million.

"When it came right down to it, they did what was right," the first baseman told the Herald. "I feel good about it, and I'm glad it's over. Now we can get on with the business of repeating as division champions."

Vaughn, 28, who took part in Thursday night's contract talks in Fort Myers, hit .300 last season with 39 homers and 126 RBIs.

"I did a lot of talking and had my say. I wanted the Red Sox to know exactly what I was looking for and how I felt," he said.

The Herald said the contract reportedly has an option for either a $300,000 buyout, or a $600,000 pay increase in the fourth year.

Vaughn's agents said earlier this week that the Red Sox had reneged on a four-year contract for $24 million, with a team option for a fifth year at $7 million. Vaughn had warned that if he had to sign a one-year contract or go to arbitration Monday, he would leave as a free agent after the 1997 season.

Negotiating with Vaughn were agents Tom Reich and Mark Gilliam. Representing the Red Sox were general manager Dan Duquette and assistant general manager and team counsel Elaine Weddington Steward.

"Negotiating is a business, and both sides had to do and say what they felt was right," Vaughn said. "There's no disharmony whatsoever. They said they wanted me and they'd sign me, and in the end, they kept their word."

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fig. 3.11.1: The Boston Globe micro firm structure

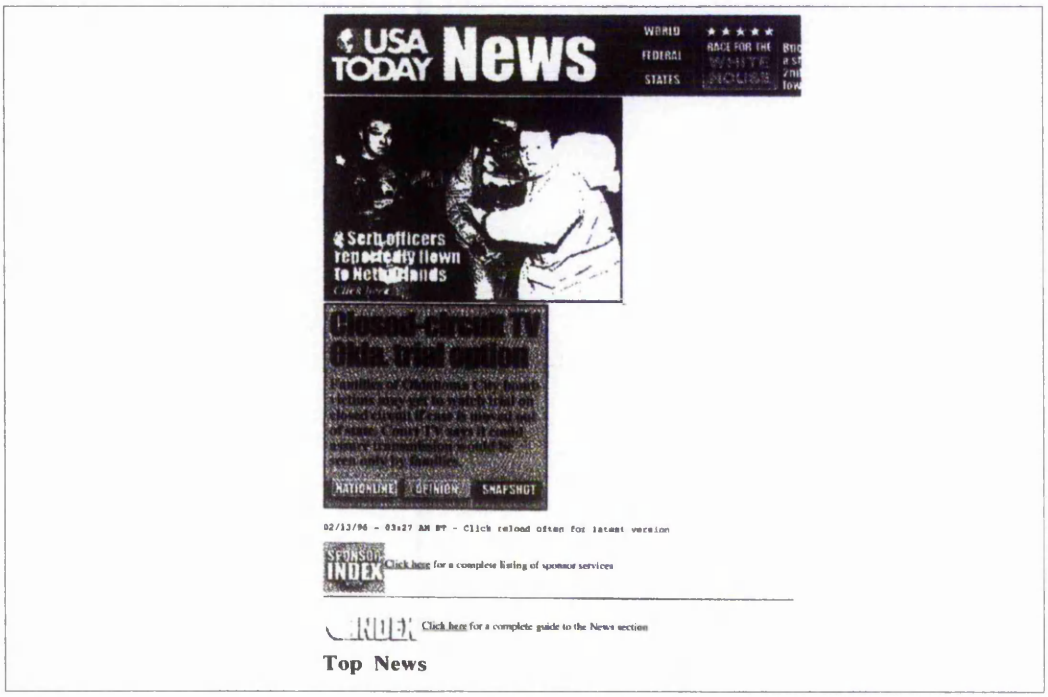

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fig.3.11.2: macro firm structure (story) fragmented between screens. USA Today front page

within the sample, sub-items were presented hierarchically - in the form of a bulleted list - signalling an explicit order. Alongside this list was a graphic icon, whose activation or clicking took the reader to the sub-item at the top of the list.

In one example, the 'story' firm structure - recalling both television and newspapers - divided the item into three discrete elements or micro firm structures: (i). a front page headline sequence combining visual and verbal elements or soft structures; (ii) a text-only introductory-headline page, and (iii) a contextualising sub-items which were themselves further micro firm structures composed of visual and verbal soft structures (fig. 3.11.2 - 3.11.3).

section

This macro firm structure organises news items thematically, dividing the news signal conceptually as a subdivision of the bulletin. The distinctions between sections are signalled by the use of typographic section names, and navigated by using a visual index that was present in most examples in the study (fig. 3.8.19).

A communicated hierarchy of news items within this firm structure was apparent, again through the listing of items. Items could be searched sectionally as opposed to using the signal's front page, and certain news stories in the sample crossed over between sections.

The networked, global reach of the Internet was reflected in certain signals in the sample with content organised in terms of continent. Often finer, thematic sectioning was used in the organisation of content.

signal

In the case of web news, the 'signal' Ma FS was composed of items arranged on the hard structure of the screen in a predefined order alongside a number of other soft structures: specifically the section name, date and time and visual index. This firm structure recalled television news and its linear, screen-after-screen fragmented news signal.

However, in the case of Web news, this linearity is not as absolute since the reader/viewer is an active presence and participant in the n-space environment and is not anchored to the signal's editorial agenda in the manner of television news viewers.

A web news signal cannot be viewed in its entirety - as a discrete conceptual unit - other than as abstract representation: a map, for instance - since its hard structure fragments the signal across a number of screens. The signal is conceptualised for and by the reader into forms of this Ma FS such as the mentioned map, visual index and front page (fig. 3.8.21).

structure

As was observed in the study of printed news, the 'front page' of a web news signal can be regarded as a form of 'structure' Ma FS. It was noticeable that the notion of a front page was

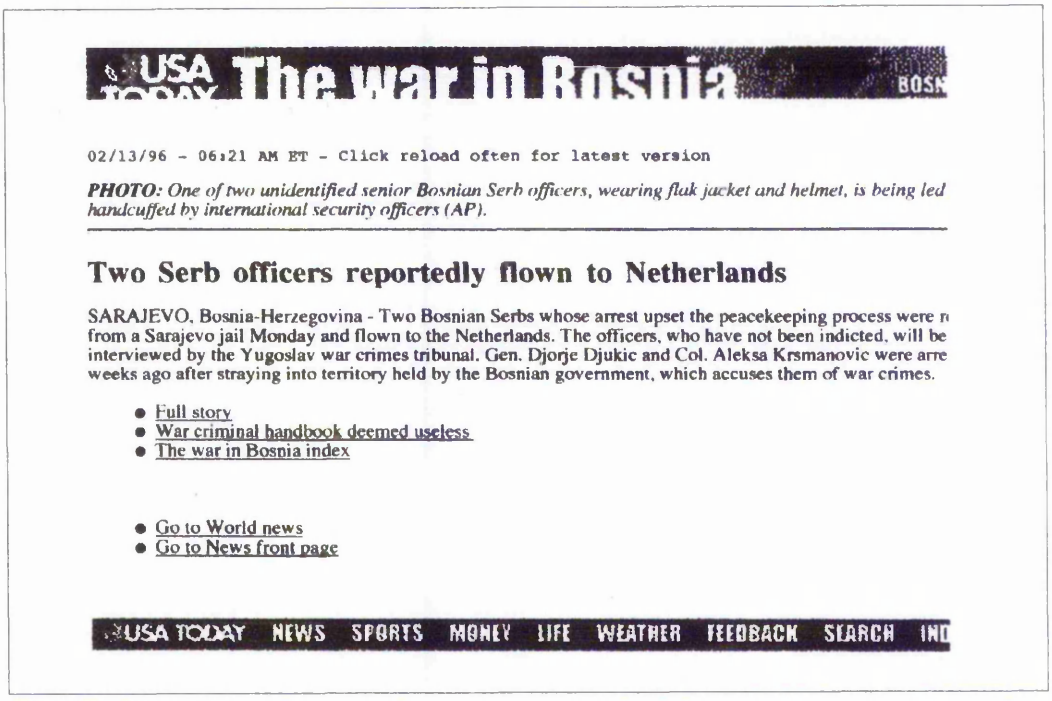

fig. 3.11.3: macro firm structure (story) fragmented between screens. Linking from the front page to the article headline

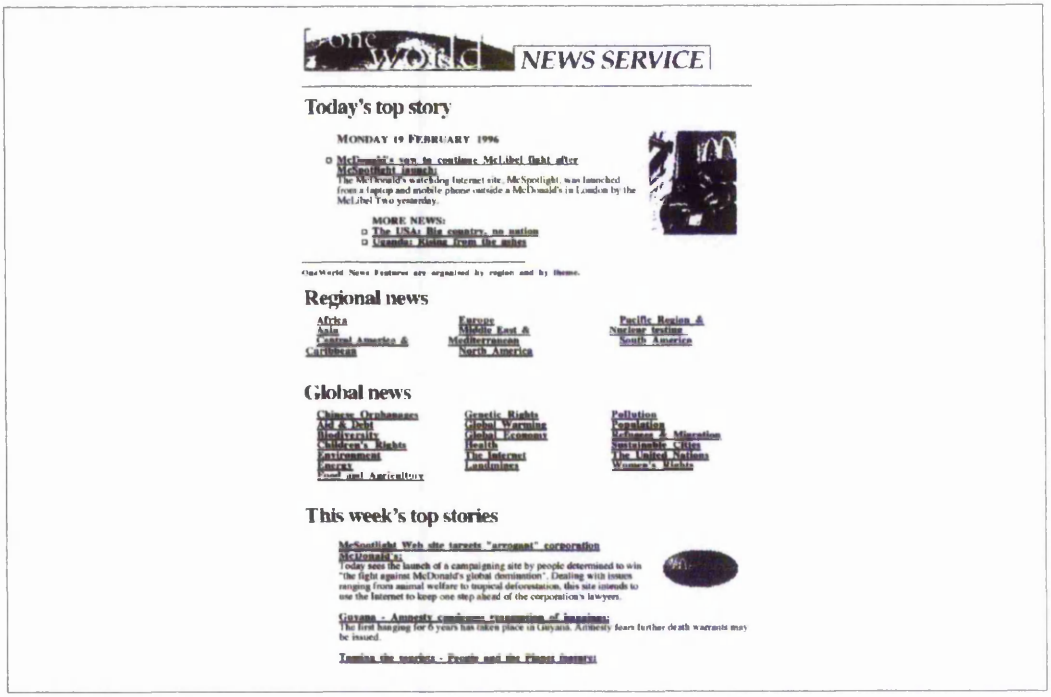

fig. 3.11.4: Oneworld front page macro firm structure (structure)

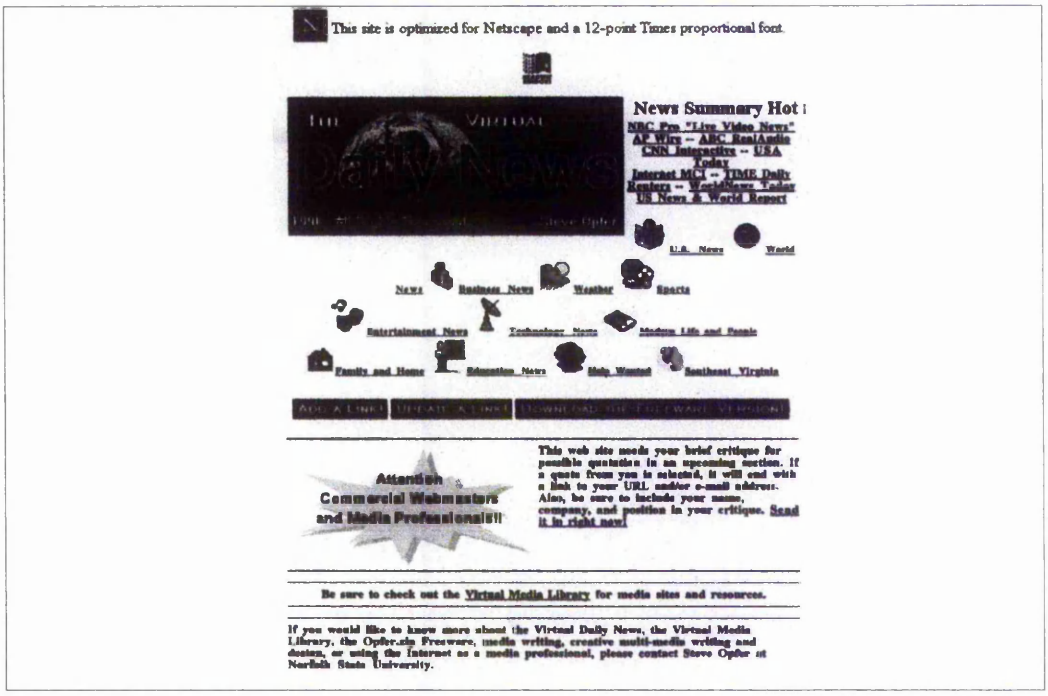

fig. 3.11.5: Steve Opfer's Virtual Daily News macro firm structure (structure)

being redefined as a portal for entry into the web n-space, becoming a conceptual centre which radiates links: no longer necessarily physically at the signal's front end. In terms of the number of news items presented on a web front page, a comparison with printed news is revealing. On average, up to seven items were presented on newspaper front pages; each with its associated headline and soft structures. Within the sample of web news, this figure ranged between twelve to twenty nine.

It was observable that, in terms of size, the range of headlines was not apparent in the web news sample. As a consequence priority was signalled in other ways: position on screen, number of associated links, association with images etc. (fig. 3.11.4 - 3.11.5)

Again, mirroring printed news a nameplate was featured in the sample of this Ma FS. However, its function was extended since it allowed the user an ever-present means of navigating the news signal as well as signalling important items and communicating brand awareness (fig. 3.8.16).

3.12 Summary

To summarise, the analyses of three forms of news communication have each presented a range of communicative structures which will be further discussed. In particular, aspects of particular soft and firm structures will be developed as a framework for the n-space model is refined.

4 Structures

4.1 Introduction

As a result of studying three distinct categories or genres of news media, significant soft and firm structures have been identified and discussed. This chapter is concerned with the results of those analyses, in remaking their potential for the communication of news, translating and reconstructing them, suggesting new alternatives for old techniques.

Initially, each news signal is discussed in terms of it's 'conceptual hard structure', attaching and outlining an appropriate metaphorical framework for each n-space. Following this, a number of individual soft and firm structures are examined: their inclusion here signalling an importance or recognising a significance which ensures their consideration for a theoretical analysis, which in turn provides the framework for this project's central concern: the prototype electronic news signal. Cliches, from newspapers, television news, and the fast-emerging n-space of the Web can be categorised and studied; laid side by side and connections drawn. Resulting patterns, links, or overlapping models can form the basis for a newer news signal, one unmade, but implicit in its preceding generations.

In appraising these structures, their underlying sets of base rules can be uncovered, revealing common or shared meanings whose translation and transformation through each n-space makes them concrete, visible, seen.

This chapter bridges the gap between theory and practice, outlining the questions or issues raised by the analysis of existing news media, and attempting to assemble a framework or series of issues or questions which will be addressed and confronted later in this text.

4.2 Conceptual hard structures

Each genre or system for the delivery of news to the news-consumer makes use of one of two material technologies with which to create its hard structure, and is therefore dependent on one of two physical surfaces: paper or glass. The screen or the page, while unfolding news, each connect with a distinct conceptual space. Print, TV and digital communications can each be classified with reference to their respective 'mediaspheres' their "..megasystem(s) of transmission (and of transportation)." (Debray 1996 p. 176)

While Debray divides his mediasphere history into three dominant periods - logos-, graphos-, and video (the technologies of writing, printing and the screen, respectively), each n-space (or newsphere) can be compared with reference to their optical devices, to their hard structures and respective writing spaces. Tangible, conceptual, cultural and political factors combine to characterise a n-space's hard structure; resulting in a pattern that refers to shifts in

communications technology, and to the subsequent creation of new spaces for the reading and writing of news.

The newspaper page, television and computer screen embody the potential for representation in the spheres of surface, thread, and space. What each hard structure codifies is the potential for connection and transmission of its related - conceptual - writing, or to be specific, n-space/sphere.

4.2.1 Newssurface

The name 'surface' implies the outside or limits terminating a solid, qualities associated with the page onto whose exterior actions and methods for the communication of printed news are joined or printed, and across whose veneer the eyes of the news consumer move.

These qualities fix with precision the nature of printed news, an object 'containing' information, the closed, complete typographic space or 'meaningful surface' (Ong 1993 p. 126) across which the mosaic pattern of visual communication combines image and text into (more or less) meaningful arrangements. By emphasising spatial (or surface) freedom, explicating its complex map of communicative potential, the newssurface of printed news is unambiguous: an open, linear yet fragmented system, hemmed in by page edges.

Printed news often makes no attempt to escape 'flatland'. (Tufte 1990 pp. 12-36) However, navigating its two-space, the mono-tone of printed text is broken by the inclusion of soft structures like the headline, whose strategy it is to represent complex multiple perspectives, layering the newssurface according to informational priority.

4.2.2 Newsthread

Temporal and conceptual continuity and linearity, rather than spatial closure, distinguishes television news. Aping the papyrus roll, this newsthread presents a 'reading path' (Bolter 1991 pp. 108-109), almost perfectly linear: if uninterested, our choice is to either ignore or switch off. Instead, the television newsthread rolls ever onward, stopping only after its allotted time is up, and in the case of rolling newsthreads: they don't have to stop.

TV news' closures are correlative with those fostered with print. The fixed tone and point of view, which can be "...preserved through the whole of a lengthy...composition...show(ed) in one way a greater distance between reader and writer..." (Ong 1993 p. 135) and continue to make this n-space a narrow channel. What physical closure there is in television news - the limitations of screen size - hampers communication only slightly. This navigationally restricted n-space is dominated by notions of hierarchy: the thread is informationally thicker at one end, and news flows along and though it in one direction only.

4.2.3 Newsspace

A sense of geography or environment, of networks and - most prominently - of space, is implicit in electronic reading. The Web's prospective conceptual continuity encourages a kind of 'inner-spatial' freedom (one electronic rather than spiritual): threads can be wound and unwound, surfaces extended and retracted. Sideways movement, the juxtapositional linearity of hypertext mirrors, amplifies and develops printed news' fragmented space.

This new space of the Web is one that evades categorisation or formalisation. The one aspect that fails - and will fail - to avoid alteration is that of the space itself. The metaphor, the conceptual hard structure and the technology

4.3 Deep and surface structures

In linguistics, typological analysis aims to identify a common structure and function from a wide sample of human communication. Standard rules of generative grammar claim that language can be organised according to the notions of deep and surface structure. These terms categorise sentence structure, for example, into two levels of grammatical structure: the deep structure - or level - represents

> "...a sentence structure in an abstract way, displaying all the factors that govern how its meaning should be interpreted...",

whereas at the surface level:

> "...there is a more concrete representation..."
> (Crystal 1992 p. 98)

Lyons (1981) comments,

> "...the deep structure is more intimately connected with meaning, and surface structure with pronunciation." (p. 150)

This semantic interpretation and transformation - from deep to surface structure - can be applied to the linguistic soft and firm structures that were uncovered in the series of analyses of news form undertaken in the previous three chapters. While I'm not trying to formalise a theoretical model that would or could be applied to all existing newsmedia, this analytical framework is useful in attempting to find a common pattern or typological common template between isolated instances of soft and firm structure taken from the studies of newspapers, television and Web news.

A news technology can be thought of as being programmed with a set of generative rules which transform and translate the ambiguous, context-free deep structure, re-presenting and re-interpreting it as a context-specific, formalised surface structure. Lyons (1981) remarks that

"...transformations do not affect meanings..." (p. 150); therefore the fundamental conceptual basis upon which a deep structure is founded isn't changed by its manifestation in a n-space.

4.3.1 Soft structures

Sets of key soft structures have been identified and discussed previously in this text. In the analysis of each news sample, a common set of soft structures was uncovered; ones whose use was guaranteed across all news media in the analyses. Within this hierarchy, some soft structures were more fixed than others: most noticeably in the seemingly permanent, immovable or immutable headline and body copy. Used together, these soft structures make up the elemental news item; providing the lowest level of information needed to communicate a story.

It should be recognised that these soft structures constituted the building blocks or foundation for every news item in this study, and therefore should be regarded as being key soft structures.

4.3.1.1 Headline (title)

As has been noted, this soft structure is fundamental in the construction of any news story. Its function is to title an item; to summarise its content. A superficial shared deep structure is therefore apparent; a high-level labelling. Locally, each news signal or broadcast constructs its own headline (superficial structure) commensurate with its conceptual hard structure. This therefore ensures differences in functionality, particularly in its management of interaction: the level of access to information which it provides.

Primarily, headlines are seduction devices. On the page, size and position on the surface determine a headline's informational power or specifically, its capacity to capture attention, to stop the reader. Television news headlines encourage the viewer to continue to watch the signal. They are initially positioned at the top of the signal and aim to fascinate or interest the viewer enough to continue to watch. A spoken headline also communicates or seduces through the tone of the newsreader's voice, supplying a tone or inflection, an emphasis of intonation that provides a degree of non-verbal information. Web headlines largely reflect and follow their page-based counterparts.

The potential of electronic communications however, enabled new permutations or firm structures to be developed and were noted in the analysis of news on the Web. The headline as link, for instance, redefines its function and will be discussed in greater detail later. Another new structural system seen in Web news, the use of image as headline (alongside an amount of text) will also be discussed with reference to its transferral to the prototype electronic news signal.

4.3.1.2 Body text/copy (text)

Like headlines, the body of information that makes up a news item's content-supply is a fundamental or key soft structure. Functionally, body copy provides an item's text, either visually or verbally. Again, the deep structures used in each news sample are similar, in terms of the consequences of information provision or access. Again, with reference to the management of

interaction, each news sample presents its text with explicit reference to its conceptual hard structure.

News on the page, using the written or printed word, and on the (television) screen using the spoken word, and the (computer) screen again making use of the printed alphabet; each refers absolutely to their respective hard structure. Within this superficial study of their shared deep structure, signal-specific differences emerge. New functions for a news item's text are being developed as the pace of technological change shows no sign of slowing; the Web is moving from an experience of reading to one of viewing, from something resembling newspapers to another that's more like television.

Along the way, the application of technological change to existing structures results in new, remade systems. Hypertext links within body text fragment the (Web) item's narrative - the provision of an 'exit event' - disrupting the flow that we associate most obviously with television's streaming signal, and, less to the linearity of any printed text newspaper text (which is itself fragmented into columns).

This breaking of traditional narrative flow, the supply of elements in the text which promise supporting contextual distractions from the text is a factor which must be noted at this point, and its existence should (and will) be acknowledged in the design of the prototype electronic news signal. The consequences of the disruption of habits of reading whose historical precedent is set by the invisible technology of the alphabet (the keystone of language) aren't of direct relevance to this particular study, but should be recognised.

4.3.1.3 Images/photographs (visual information)

Pictures supply the viewer or reader of news with a level of visual information which differed across each sample of news. As in previous discussions of soft or firm structures, television news and newspapers seem to stand at opposite ends of a spectrum within which images were used. Arguments concerning the relationship between visual and verbal spaces in television news have been outlined: the Glasgow University Media Group (1976) insist that images are subordinate to the written text of newspaper journalism whereas Yorke (1990) argues the opposite: that the text refers to and complements what we see.

In television news, however, the image is dominant. It is news for watching, so the image occupies a primary point in the signal, whether it is rich, informationally, or not. In newspapers, and Web news still images are used illustratively; positioned at a point on page or screen adjacent to its textual referent. The image in these signals has a lower-level importance, in terms of information provision, but as agents for interaction management and information access, images in print and on the Web may often be points of entry to the text. The dominant visual element, for example, signals an item's position and priority in the news hierarchy through size. Colourful or interesting images - some might say any image - will draw the reader into the text, stopping their movement across the page or through the item. The relationship between image and text - again in print and on the Web - is often fluid, with the reader referring back to it as movement is made through the item. The images in this case act as visual references or

footnotes for the information in the text, presenting contextual or additional information when needed.

MacGregor (1997) discusses the essential part images play in news, specifically in television and print.

> "Pictures, the great advantage television has over the print media, are in one sense also a problem...(T)oo often pictures appear with relatively little connection to the words..." (p. 214)

The problem, as MacGregor acknowledges, is the difference between analysis (favoured by the written report) and perception (favoured by the visual). Too often perceptual television news supplies context-free imagery, simply because "(L)ike it or not, in television there has to be something on the screen." (p. 214) Similarly, in print stock or library images are used to fill a hole on the page when a relevant image isn't available, and - as discussed in the chapter on newspapers - themed news visuals can be identified - examples of types of images, one of the most recurrent being 'middle-aged men in suits'.

Following MacGregor's argument, the gap between image and text should be closed. Connections should be made between what is spoken or read and what is seen. Web news does grant this type of linkage; a hyperlinked word can lead to contextual imagery, for instance.

The importance of imagery across all forms of news delivery must be recognised, and maintained in any new electronic news signal. As has been discussed previously, the Web seems to be following a pathway towards something like television, although whether it will simply replicate TV is doubtful. Technological developments - systems for difference - are in place, and as the Web news analysis revealed, the newspaper/television hybrid will develop into a signal unlike either.

4.3.1.4 Sub-heads
(seduction devices, sub-titles: provision of extra information)

The use of a form of sub-headline occurs across all three sampled news media. Three slightly different kinds of signals were apparent, although the consequences were similar. Superficially, their deep structure may be considered comparable: their position in an item's hierarchy anchors their role as a contextualiser, providing a secondary level or degree of information.

Superficially, this comparison may be true, but their deep structure - in terms of managing interaction - is different, so consequently their function is different. The function of the sub head differs in each sample: used in print it stops readers, in TV it clarifies what is being presented next, and on the Web, it encourages readers to go on, or move forward. To ensure successful seduction, certain sub-heads on the Web increase their length; a four line sub-head presented in USA Today for example. However, a shorter sub-head was used in another instance on the Web - one line, separated from the headline by a colon, used in CNN Interactive - recalling those used in print.

The sub-headline, therefore, differs functionally across each sample news media. In Web news, a new model is emerging; one that reflects or responds to its networked digital environment, and the new needs for managing interaction and navigation.

4.3.1.5 Byline (author identification)

A news author is identified in a number of ways, across each sample of news. The form or surface structure of this soft structure is the same: the author's name. Print and the Web communicate this information verbally (written), television prints or speaks it. Author identification of this type is required to signal to the reader or viewer the person who is being credited for this item. This accreditation often dictates the story's newsworthiness: some - generally less important - items may not be given a byline, reader or viewers may trust or favour or respect or like one author above others.

Above the verbal byline signal - written or spoken - the author's image is often used. The visual talking head supplies the television viewer with the image of the author as speaker of the news text. Also in television news, a still image of the (unseen) speaker often accompanies his or her name. Likewise in newspapers and on the Web, the author is transformed into an icon or logo: an image and text combination which signals authorship and authority, branding of personality or commentator, and can - like higher-level soft structures discussed above - seduce the reader, managing their interaction.

The Web allows a further level of this interaction, specifically with the author-as-personality. Hyperlinks from the author's name or image could provide access to details or contextual information, or can allow direct email communication with the reporter. The gap between producer and consumer of news - in terms of the potential for dialogue, as seen in 'Right to reply' viewer feedback television programmes or newspaper editorial letter pages - is there to be closed.

Crediting authorship will continue in the prototype electronic news signal. As previously stated, the inherent potential for growth of would-be authors or publishers in the electronic news space might ensure that the reader's use of a byline as guarantee or brand name might increase since the number of available authors or opinions or news texts is seemingly unlimited. However, the continuity of this type of accreditation isn't to serve those already established authors or reporters. Rather, identification or personalisation of those producing news can open connections and signal or highlight differences between the new electronic space and existing n-spaces.

4.3.1.6 Caption (Image contextualisation)

Describing and explaining, captions are most often associated with their use for image contextualisation. Accompanying a still or moving image, in all news signals in each sample, this written soft structure forms a link between image and text. This link in printed news is ever present:no image is printed without it's explanatory label device. This labelling occurs more regularly when still images are presented in television news, since moving images are shown with a voice-over. The iconic backdrop, for instance, captions it's visual element (in some cases) with

one word, whose link to the image is explicit and obvious. Like captions in print, Web news captions still images although examples of caption-free image were used.

In terms of allowing access to information and managing interaction, captions pin down their respective visual element's meaning; defining and describing their content. In Web news however, a caption may open the image out or unfold it's meaning whilst still being specific: a caption-as-link provides a point of entry to the story, or to an associated aspect of the story, from which more content or context is supplied. The Web caption (or electronic caption) can be compared to the Web sub-heading; their function is to supply more information than would be given in a headline, pointing the reader in the direction of the text.

4.3.1.7 Nameplate/logo (channel/station/signal identification)

News signal identification, a clear graphical label, whether used sectionally - to identify themed areas or sections - or as a nameplate in newspapers or logos in television and on the Web, communicates and identifies

> "...the link between newspaper and reader...convey(ing) at a glance the personality of the newspaper...(T)he nameplate is the one item that the newspaper will wear every day." (Garcia 1981, p. 79)

As this excerpt makes clear when discussing printed news (an identifiable deep structure is apparent, however, with connections capable of being drawn with the other sample news signals in this study) the labelling of a news signal - whether on television in the form of a spoken title or visual logo or ident, the Web or in print as logos or nameplates- bridges the gap between producer and consumer, promoting a reassurance and durability: that the overarching structure or presence of the signal won't change, although it's content may be in a state of flux.

Branding of goods encourages this reassurance and familiarity, and the continuance of this practice in the sphere of news signals is no surprise. The BBC logo, for instance, vital in the recognition of that particular organisation, is altered at great cost and with the knowledge that no change can be too great, and has a guaranteed visibility throughout BBC News signals: at various points in time and space. Notions of trust, quality and tradition are signalled in this logo's use.

The nameplate is constant throughout a signal - repeated on many screens and pages - and besides naming the signal, the confusion that may be possible when navigating any new form of electronic news can be partially halted by the use of a nameplate or logo, to which readers can return and which anchors the signal- as is seen in a number of Web news signals. A dominant visual element in all news signals, a form of nameplate can be included in the elements considered for inclusion in the prototype electronic news signal.

4.3.1.8 Date and time (temporal location of signal and item)

A news item's location can be situated on the page or screen, at some point in space on its display device, and from this location distinct hierarchical signals can be communicated. Another, perhaps more or at least equally important location for news, is its temporal whereabouts. Date and time, of both signal and item (macro and micro structures) are signalled in all signals and spaces, either by printing the date on page or screen, or announcing it at a point in the broadcast.

Time can be announced in the signal - at half-way through a television broadcast, for instance - to locate the viewer in it; as an explicit reference to its finite structure. Web news meets the growing need or emphasis for speed in the communication of news, by being able to report an event at a time close to it's occurrence. This closure is increasing as communications technology is getting faster. The prototype electronic news signal therefore, will need a system for monitoring and signalling an item's temporal location. Hierarchies of time - item's organised by their point in it - should be investigated

4.3.1.9 Visual index (signal navigation)

Like the use of a nameplate or section name, or the signalling to the reader of their position in the signal (through a date/time notification), techniques for a news signal's effective navigation are made explicit on either the page or the screen. Visual indices present the reader or viewer with an archive, a searchable database of that broadcast's content. These indices were located at different points in each sample of news media, presenting the reader/viewer with a number of strategies for reading/viewing.

The start of the signal (headline sequence, front page) was a preferred point, listing content that can be expected within. Television offered a visual and verbal preview of what the viewer could expect, in the order they would be delivered; newspapers and the Web with a matrix of links to any point in the signal which could be browsed in any order. Printed news' links were fixed either by page or by section, implying an order or hierarchy to the information. The Web's link-potential was greater, less enclosed than that which was open or available in newspapers since it's conceptual hard structure was more open: links weren't limited by a physical space. Also, indices were tiered or staggered in certain instances in Web news: one index was available on the 'front page', another for a new section, and another when reading a specific item. The function of a Web index, is therefore more greatly managed than in either of the two other news samples; different types or levels of access to news items were available at different points in the signal, and may also be changed over time.

It is essential that a map or index or list of contents be included in any news signal - theoretical or practical. The form of this index may vary, the quantative limits to it's information may change (from television's three to four items, to one newspaper's thirty seven), but as a structure which enables access to and interaction with information, it's presence in a new electronic news signal is vital.

4.3.1.10 Links (connexion/contextualisation)

Linking within and between news signals (and items in those signals), again is evident in all samples in this study. As has been discussed above, the use of indices in news provides the reader/viewer with an explicit organisational system that they can either view or interact with. More specific links are included in news signals to signal individual links between items.

In this enquiry, the most widespread use of this type of link is of course news on the Web: as contextual and supporting connections, the hypertext link - embedded in a word, sentence, image or graphic - is explicitly signalling itself, through the use of colour and typography. These links cross boundaries of time and space, providing access to information in other signals and from near-history.

Television's verbal links occupy the space between items, when newscasters provide the (mainly visual) connection which is again, one of the few consistent presences in a TV signal. Links in a television news signal - between items - usually take the form of 'side headlines', fragments of speech or single words: "And next...", or "From X to Y" or "Now, the..". Other links are infrequently made to external television programming, outside the signal; current affairs programmes covering the same item, for instance.

Newspapers often supply links - whose 'difference' is signalled typographically - following a news item, to other related items in the signal, and like television may rarely refer to information outside the signal. Each form of link used in news, provides a different form of interaction with the signal. Television supplies connections in their simples, most transparent form: the link as link. Print and the Web seem to aim for the link as contextualiser/connector, where an item (and the reader's understanding of it) can be expanded and enriched, and themes or issues of interest can be followed.

When discussing links in a prototype news space, the Web can be discussed as an immediate predecessor or descendant. The Web - as has been noted - encourages a forward movement, through the item, the broadcast and the n-space in a way that the limited flow of television news doesn't, or can't. Every linked item or element is an opening into other aspects of the text - each is a node in the mesh from which the story can be constructed. Importantly, the reader is able to follow traditional signals, structures, signs or cliches and construct the item along what may be considered traditional lines. The soft and firm structures that are cliches and are key or fundamental for the effective communication of news are (optionally) maintained in the Web's space, although options for their remaking are introduced. Their reassuring presence - the cliche's hallmark or reason - means that a firm means of navigating the n-space will always remain.

The scope for potential connections in a prototype electronic news signal will be equal and possibly greater than those available at present on the Web, so it is recognised that a system for linking and signalling connections between items and their elements should be implemented.

4.4 Firm structures

A number of firm structures - organised systems of soft structures - have been outlined in the preceding three news analyses. Of these, particular examples have been selected as having sufficient potential for effective communication in the prototype electronic news space, and their discussion here is recognition of their probable appearance in that model. Individual cliches have also been highlighted and discussed. These firm or soft structures are guaranteed inclusion in the prototype since they supply reassurance to the reader: their use and representation will promote the links between all news signals in this study. The importance of the cliche for this study should therefore not be underestimated. As previously mentioned, new firm structures will emerge from the hybridisation or cross-fertilisation that occurs when firm and soft structures from old news spaces are combined.

The pattern previously identified in studies of samples of existing news signals has resulted in the following list of firm structures emerging as 'best practice', firm structures whose shared deep structure will be discussed here and whose potential and promise for remaking in the electronic news space will be mentioned here, and detailed later in this text.

4.4.1 Macro firm structures (organisation/fragmentation of signal/section/unit (page or screen)

'Macro' implies a global or overarching structure, and macro firm structures are concerned with general - signal-wide - organisation. The fragmentation of a news signal; from the bulletin to the section and to the unit or item involves the application and presence of networked firm structures into sets of incremental macro-firm structures.

This systematic organisation of news is apparent in all samples of news signals. All news spaces are fragmented: into regular individual signals, bulletins or issues or editions; the consumption of which enables the public to understand news as a commodity. These signals, by necessity are fragmented, since each discrete element (section or item) must communicate individual stories or themes. A news signal's fragmentation may be in part attributed to it's conceptual hard structure, it's news space defined by it's language technology.

Generally, three sets of macro firm structures have been identified in the samples of print, TV and Web news. From high to low level, these are: signal or bulletin as macro firm structure, section as MaFS and finally item or story as MaFS. Each macro firm structure is a network of elements or soft structures, or often a network of firm structures which organise the content of the news space (rather than being directly responsible for its visualisation.)

Print's news signals are fragmented further; into thematic sections, and within those sections into items. This conceptual fragmentation is mirrored by the spatial break up on the newssurface or page. This mosaic interface - printed news' distinctive identity - enables a large amount of information to be communicated efficiently, through an intuitive, sophisticated - and perhaps most importantly - cliched, internalised system of information design. The macro firm structure of the news item or story in print is composed of smaller sub items (which can be called micro firm

structures), and like the fragmented page can be arranged in a mosaic pattern within this macro firm structure.

Television news - the newsthread - is fragmented in a more concrete, linear fashion than print, fragmented in time rather than space, since its defining communications technology insists upon a finite signal, with a regular pattern and number of items. It's bulletin is fragmented hierarchically, into specific items (these fragments are bound together by the presence of the newsreader, whose function has been discussed above). Therefore two tiers of macro firm structure are apparent in television news: the signal and the item.

Web news, in all tiers of it's macro firm structures - bulletin, section and story - is perhaps the most fragmented when compared with newspapers and television news, it's organisational systems are scattered across its conceptual news space and it's physical interface or screen. Like print and television, Web news has an imposed linearity, it's reader having most in common - and perhaps more freedom to browse - with the newspaper reader. Web news' conceptual hard structure - the n-space - disallows any attempt to view a Web news signal as an object or unit. It's limits are fuzzy, unlike those of television and print.

However, in all tiers of MaFS', hierarchies of information were apparent, particularly with the use of indices and lists; revealing an underlying structure which maintained a pattern of orderliness. Unlike print, Web news fragmented one item between a series of individual screens, destroying or damaging the conceptual connections which are drawn or made when items or elements are presented in the same physical space.

4.4.1.1 Navigation devices
(encompassing visual indices, nameplates, page numbers, section names)

Although a number of navigation devices were discussed as individual soft structures, each manifestation of this macro firm structure can be grouped together under this umbrella title. The visual index, was used in each sample of news media, although differed functionally in each instance. The MaFS that we can call a navigation device, is one that supplies the reader with a means of accessing and negotiating each distinct news space. Other examples or manifestations of this are nameplates, section names and page numbers. Each instance enables or provides a specific way to move around the signal.

Functional differences again are generally defined by each space's conceptual hard structure. Print supplies a number of matrices which can be cross-referenced and compared in order that news can be located: indices, contents lists, nameplates, section names, page numbers and isolated 'spot links' (when an element of text is isolated or enlarged on the page - a soundbite, for instance - alongside it's page number, pointing the reader to it's location, much like a trailer in cinema or on television). Each device is a fragment of a map, or one refined type of contents page included at various regular points in the signal, often with the aim of stopping the reader as well as encouraging sideways movements through the space. Key navigation devices are placed at specific positions in the signal; a front page will always include a form of visual index. Used overlapping, a great amount of the space's content will be revealed.

Likewise on TV and the Web, specific means of access are supplied; the headline sequence on television signals a trailer of what is to come, Web news' navigation devices, superficially following print, encourage a forward movement through the space. More importantly, they provide a much-needed anchor in the space, since navigation through the Web (any Web) can become confusing and it is easy to become lost. The Web's conceptual hard structure has none of the sense of physical, concrete, sequential objectivity that print's has. Page numbers, for instance are largely useless. Other anchors are needed, sectioning in Web news is perhaps the key means of navigating the space.

It is apparent that navigation devices are essential in all news spaces. New - or remade - macro firm structures are therefore being suggested in the new n-space of the Web. In the seemingly infinite environment of a new spatial news signal - as the Web and it's users will attest - a system that aids navigation, anchoring the reader, supplying him or her with a sense of location in the space is more important than ever. This issue will be addressed in the prototype.

4.4.2 Micro firm structures (organisation/fragmentation/visualisation of item)

As mentioned briefly above, micro firm structures are those arrangements or constellations of soft structures which are presented to the reader or viewer as elements in the communication of an individual news story. One news item - itself a macro firm structure, as detailed above - can be further fragmented into a series of smaller micro firm structures, each signalling a certain aspect of that item.

Micro firm structures are concerned with the visualisation of a news item - its presentation on or in the signal's hard structure, whereas macro firm structures apply to the news signal's conceptual or organisational systems. Therefore, the fragmentation of a news item can be discussed in terms of both it's macro and micro firm structures, since one is theoretical and the other practical.

What follows are a series of micro firm structures whose discussion here signals their consideration for inclusion in the prototype electronic news signal.

4.4.2.1 Fragmented item

As discussed in terms of it's macro firm structure, a news item can be fragmented thematically, or organisationally: with each sub-item covering an aspect of the overarching story. It's micro firm structures are specifically concerned with the item's presentation on page or screen. In the samples of printed and Web news, an item was fragmented on the surface of it's hard structure. This mosaic pattern of information design enables an efficient and intuitive means for accessing that information. Television, too, fragmented items, although their visual communication on the hard structure was less sophisticated; few visual elements would be placed simultaneously on-screen, since movement through the signal ensures any images are presented for a short time only. A visual/verbal fragmentation takes place in television: the item's verbal information is

delivered via the speech channel and the complementary visual information is displayed simultaneously.

Above all others, the interface of printed news presents the news reader with a sophisticated fragmented, spatial metaphor or model. This pattern or style, while initially seeming complex or confusing, enables instant access and flexible and intuitive navigation. Aping this interface in any new news signal would be futile, since to a large degree it's success depends upon its conceptual hard structure. However the underlying structures - the fragmentation of the viewable area, predominantly along the vertical axis - enabling parallel readings and juxtapositions should be acknowledged and their potential for remaking in a prototype investigated.

4.4.2.2 Adjacent or simultaneous links

Linking between items in a news signal - as has been discussed - is widely used, particularly in the hypertextual environment of current electronic news on the Web. Another aspect of linking, specifically between elements of a news item, is also evident in the sample of news signals. This, visible style of linking rather than contextualising a connection embodies the link and linked on the signal's conceptual hard structure. This micro firm structure functions to present exit event (link to something) and connected event (linked object or element) simultaneously.

For instance the link-up technique used in a number of television news interviews presents interviewer and interviewee, on-screen - sharing, and embedded in the same space, at the same time. This explicit linkage is similar to instances of magazine design when attempts to represent the screen-based hypertext systems of electronic communications on the page result in a mesh of columns and lines, of highlighted exit and entry words and synchronous textual connections.

Two-way link-ups are relatively common in television news, three or four way less so. However, the placement of two adjacent, captioned talking heads on-screen presents the viewer with quite a sophisticated micro firm structure. Print's closest equivalent MiFS is a graphic technique where a number of phrases are removed from the body text of an item and placed side by side, giving the impression of conversation. Something similar is the routine question and answer interview, or a before and after series of images presenting cause and event in relation to the item.

Browsing the Web often recalls the back and forward movement and momentum of conversation, although no equivalent micro firm structure was apparent in the sample for this study. It might be simple, however, to imagine a form of linking on the Web that mirrors television's significant MiFS. An element (verbal/printed hypertext link) - once activated - may trigger an adjacent element (moving image), and connections could be made and remade between the two. Additionally, having two linked browser windows open and triggering connections between them might - functionally - be similar. The growing use of frames on the Web may be the emergence of an equivalent MiFS: the screen is divided into a number of panels or sub-screens (a common feature of television news, a recollection of the mosaic newspaper page) and links from one panel can cause a change in and connect to another.

The simultaneous or adjacent presentation of liked elements within a news item is a micro firm structure whose development has been dependent on the sense of movement engendered by the screen. An equivalent newspaper MiFS is difficult to locate therefore, although static attempts have been tried. This communicative device can be extended and refined in a prototype electronic news signal: the simultaneous presentation of link and linked may open new potential for investigation.

4.4.2.3 Element juxtaposition

Simultaneous presentation of elements linked to one another depends upon the spatial relationship that exists between two juxtaposed objects. By placing elements side by side or above and below - this action of juxtaposition - a connection is signalled, and a link created. Browsing a newspaper, two images alongside one another - separated only by their borders - automatically trigger in the reader an association: why have they been placed next to each other? Captioning will aid the answering of this question, as will the content of the images themselves, but the immediate reaction, making the connection follows from their relationship on the page.

In all news signals, the juxtaposition of any elements is deliberate or designed. Specifically, this micro firm structure (perhaps the most significant of MiFS's) is concerned with the effects of placing individual soft structures around and about one another, and the resulting effects on those elements of this placement. Television news juxtaposes elements as part of it's flowing newsthread, it's juxtapositions reducing in hierarchical significance as the signal progresses. Locally, the assemblage of sub-items which construct a story are linearly programmed. Printed news' clustered juxtapositions, of sub-items or elements around a central node on the page - a headline, or image - signal a moving set of relationships between those elements. Information is 'horizontally accessible'; parallel readings become possible instead of television's serial option. The fragmentation of items on the Web continues this notion of parallel access (to news), although reconstructs it's conceptual hard structure and fragments items between screens. A sense of hierarchy to these fragments is introduced - other than those existing spatially.

What Web news may have introduced to the management of (juxtaposition) interaction when reading news is an explicit communication or signalling of pre-programmed rules or hierarchies, those systems the reader follows intuitively and implicitly: the movement from headline, to sub-head and finally body copy, for instance. In print, this movement can take seconds and involve minimum conscious decision-making; on the Web, a deliberate set of decisions are made: connections are intentionally formed. These juxtapositions - and perhaps their meanings - are taken apart, their mechanism revealed, and then reconstructed by the reader in the making of the news text.

The juxtaposition of elements (whose combinations construct news items) can therefore be said to be meaningful; placement on or in both the physical space and conceptual hard structure assembles a (micro) firm arrangement of sub-items which in turn form the news item. These elements could be rearranged to form another MiFS, which would produce another set of meanings.

Juxtapositions, similar to the simultaneous presentation of linked items or elements supplies the reader of news with an immediate, explicit spatial connection. Potential for meaningful juxtapositions as a micro firm structure - the arrangement of soft structures to form aspects of a news item - will be investigated in the construction of the prototype electronic news signal.

4.4.2.4 Front pages

Every news signal in the sample of news media included a point of entry to it's space. This micro firm structure signals those items regarded as most newsworthy, presenting a top tier in the visible hierarchy of information. In terms of its organisation, all news signals in each sample fragmented those items being presented; different levels of information were available for access. Television news' front page can be regarded as it's headline sequence, often offered before the broadcast's opening credits. Print's front page is a more complex structure, up to seven items were presented, in text and title combinations and in certain items continuing into the paper. Likewise, Web news - although presenting more items - combined headline and sub-head. Less often was body copy visualised on the signal's front page.

Functionally, each front page allows different types of access to information, manages reader interaction in different ways. Television, again, presents the viewer with key items which will follow in the course of the signal; print's MiFS front page stops people and centres the reader on different items since the item's text is presented in the same space as it's title; Web news fragments it's front page (like print only more so) in terms of it's organisation and it's visualisation. More in common with television than print, Web news' front page presents only title and sub-head, text is not often accessible until the third connection or link in the item's 'chain'.

The provision of a front page is deemed necessary in the communication and delivery of news: as a micro firm structure it enables a brisk reading of the space, signalling 'all there is to know' at a certain point in time. Printed news employs techniques to make it's front page more accessible and eye-catching, employing typography, image, size and colour of it's constituent elements, seen most prominently in the tabloid poster format and format. This MiFS, therefore, is one that should be carried over to the prototype electronic news signal.

4.4.2.5 Headline as link

As has been mentioned widely in this text, one significant aspect or expression of news on the Web is it's manner of turning soft and firm structures - from television or print - inside out. In this case the Web makes explicit what has previously been implicit, intuitive structures of reading are externalised. Reading a news story, for example, once followed a silent pattern of eye-movement: of internalised selection, focusing, re-selection and refocusing. Hypertext amplifies and clearly signals this once unrevealed pattern.

Headlines on the Web are no longer 'stopping-structures' as they were in print, guiding the eye across the newssurface. Instead they have become 'encouragers': often underlined and coloured to intensify or enhance their appeal, the headline as link fragments a news item along the same lines as it did in print, but signals this fragmentation unequivocally. Readers are supplied with a

layered space - again, a notion not unknown in print and on TV - where headlines, in particular are categorically and specifically presented as the initial or 'top' level of a news item. Where once a movement between title and text may have been almost instant, on the Web a set number of explicit links need to be followed.

The headline as link, and the distinct fragmentation of a news item that follows, is I feel an important emerging structural system of new electronic news. This specific example - and it's underlying deep structure: of definite partitioning and signalled encouragement - can be extrapolated to other soft and firm structures in the n-space. The potential for this micro firm structure will be investigated in the prototype electronic news signal.

4.4.3 Cliches
(subset of firm structures that are ingrained: talking head etc.)

Cliches or stereotypes can be thought of as a subset of firm structures (although some may be individual soft structures) who through use and repetition have become ingrained in the mind of the reader or viewer, inseparable from their associated signal or news technology. Cliches which have been identified and discussed are to be imported into the prototype electronic news signal, although their final form may differ (without destroying the cliche).

4.4.3.1 Synchronous talking head

The talking head, as used in television news, is a firm structure - more specifically a cliche - that can be taken into an electronic news signal. Its function is recognised and its superficial form can be transformed. The combination of moving, authoritative image and synchronous sound is, as has been noted, an integral element of television news, as used in a variety of contexts in all signals of the sample.

The synchronous talking heads identifies the author of the item, and in certain cases provides context in terms of the author's location, besides the provision of content via the signal's verbal channel. The news caster or reporter has become the identifiable figurehead of television news, it's recognisable, or visible identity. The persons behind this firm structure have developed into trusted personalities, existing outside the news and the signal.

In a new electronic news signal, the potential or scope of or for this firm structure is widened. Firstly, the linearity of television news, monitored by an overseer or talking head will not be permitted and will not exist in the electronic news space. A caster linking items will not be needed. The identifiable authoritarian role of the talking head will be increased, as the scope for news production increases: hypothetically, every news item might have it's own talking head since an equality of opportunity - a notion perhaps utopian - will exist. The potential for this type of growth in news producers might mean the use of the talking head as an instant byline, a instantaneous visual signification or identification-device.

4.4.3.2 Columns

Like the synchronous talking head, the column is a cliche - a transparent firm structure - which can be transported into the prototype electronic news space, remaking it's function or deep structure, while maintaining it's outward appearance, form or superficial structure. As a soft structure, the role and function of the column has been investigated and reported: it's value and significance in printed news (and to a lesser extent on the Web) assures it's re-presentation in a new environment.

The column can be regarded as the key informational unit in specific types of news delivery (column inches in newspapers signify an item's importance, for instance). As a - notionally - text-based system for electronic provision, the prototype can rely on the column's inbuilt potential; to effectively organise verbal information into discrete units.

Again, the re-presentation of the column in prototype electronic news signal will widen it's current functional scope. The prototype's conceptual hard structure - as has been noted in this chapter - characterises it as a signal without physical form, therefore, unlike print, column width will not be dictated by page width. Unhooked from the hard structure of the page, electronic columns can be remade as a new structural system for the presentation of news, anchored or dynamic at - potentially - any point in the signal.

4.5 Issues

From the above examination and analysis of deep and surface structures in each sample of news, certain issues have been uncovered; relevant to techniques or systems of organisation and visualisation which could be considered a form of 'best practice'. These issues point the way for the development of one prototype electronic news signal and form its theoretical basis as its design develops.

Each of these six issues is informed by the analyses of news media and subsequent consideration of communicative structural systems, and is concerned with one broad aspect of electronic news delivery and form; with topography and geography: the signal's conceptual hard structure, with patterns or systems for the spatial and temporal organisation and visualisation of electronic news, with new techniques for the navigation and processing of organised electronic information, with signalling connectivity and organisation, and with the subversion and remaking of older cliches, or soft and firm structures.

Answers to questions raised in the preceding set of analyses - how will the potential for movement or for absolute connectivity effect the organisation and visualisation of a news item, for example - will be attempted. The following discussion of theory runs alongside the development of practice: attempting to make concrete what was up until this point, conceptual.

A brief outline of each issue follows, each will be discussed in depth at a later point in this text, and will be supported by references to the prototype electronic news signal developed alongside

the theoretical analysis.

4.5.1 The electronic n-space

This chapter aims to explore the issue of a spatial metaphor or paradigm, following and extending the topographical or geographical one alluded to or offered in Web news is to be constructed, through which electronic news can be communicated, and in and around which the reader can 'move'.

Unlike printed news, any physical boundary or constraint (other than those implied or imposed by the reader's screen) can be removed. News can be freed from enclosures and limitations - of both time and space - as seen in the newssurface and thread., the screens limits have been checked. Local and global organisational structures are to be outlined, macro systems for coordinating items thematically, and micro systems for arrangement within the space, across four-dimensions: the X, Y, Z axes of space and T: Time.

4.5.2 Static/spatial image/text

This issue is concerned with the investigation and evaluation of the potential for the spatial arrangement of news items and elements, the organisation and communication of news in the space. News' design and the coordination of a news item's component elements, in particular image and text, will be explored, recalling - though not aping - the intuitive interface of printed news. By placing elements alongside one another, new communicative systems or structures can be examined and outlined. Both macro and micro firm structures, the fragmentation of broadcast and item will be remade in the new space, signalling new hierarchies and reorienting old ones. This chapter will analyse the effects of this re-presentation, with specific reference to static news items: those not affecting or being affected by the potential for movement that is inherent in the new, spatial metaphor.

4.5.3 Dynamic time and space

Here, I intend to appraise the effects or issues involved in the temporal organisation of news items in the space/signal. Instances of real-time organisation and of the movement of items across the space reflect the dynamism intrinsic to this new information space. Notionally, movement encompasses trajectory, direction, distance and speed, as well as the dynamics of alteration to colour and contrast. Gaps in time - points at which nothing occurs, either reader-driven or following a period of 'news-inactivity'- will also be examined.

4.5.4 Visible links and networks

Networked digital communications technology is seemingly preoccupied with the making and maintenance of connections between points or nodes in the new electronic space. Links have become powerful techniques or tools for the communication, contextualisation, navigation and processing of electronic information. Maps and indices, reference tools for the steering of news have developed with and abetted the continuing complexities of information communication and

design. Therefore, as newer - or conceptual as in this case - systems for news presentation develop, synchronous systems for the mapping of this new space should be produced. Issues concerned with the network as a 'visible and operative structure' for the effective communication, understanding, navigation and interpretation of electronic news in the prototype electronic news signal or space will be examined.

4.5.5 Electronic columns

The column has been recognised as the definitive organisational structure in written communication. Issues relating to its use and potential will be explored. In instances such as their use in printed news, the importance, power, sophistication and potential of the column in communication design is highlighted. This cliched soft structure is ripe for representation and transformation in the prototype electronic news space: its redefinition might awaken new structural systems using this cliche, as well as reinforce older ones. Parallel readings and juxtapositions in newspapers can be developed, acknowledging their flexibility and intuitive nature, as systems for the communication of such structures as hypertext links between elements.

4.5.6 Rolling-over and clicking

An intuitive, flexible system for navigating news may be considered desirable when exploring a fluid space for the communication or delivery of electronic news. One model that to a certain extent succeeds in satisfying the above criteria - and that has and can be studied - is the system embedded in printed news. Movement across the page - any page - involves complex processes of scanning, pinpointing, focusing and refocusing. Issues connected to a system based on this model will be analysed, and a remaking of it will be attempted. A seamless space - as the prototype electronic news signal is - promotes an icon-free environment, ignoring traditional notions of graphical user-interface design.

4.6 Summary

To summarise, a prototype electronic news signal can be founded upon these results, from a series of analyses of existing news media. From this chapter, key structures for the communication of news have been uncovered and discussed from the Web, newspapers and television. In particular, two significant cliched firm or soft structures; the synchronous talking head and the column will be carried into the prototype. A further ten soft structures and six firm structures have been isolated and considered for inclusion in the model.

These six previously specified communicative structures will be outlined in the following chapters. This discussion will form the model's theoretical framework, during the course of which they may be refined or remade and any key issues identified and defined.

5.1 The Electronic n-space

5.1.1 Introduction

This chapter aims to address issues associated with a spatial metaphor or paradigm, the sense of geography and territory which underlie the model for the prototype electronic n-space. The following text outlines the conceptual framework for this aspect of the model , illustrating these theoretical points with examples from the model and diagrammatic representations of the issues being discussed.

The environment in which news is delivered is examined; its conceptual hard structure is considered. The axes of space are analysed and defined, as is the unseen axis of time; the potential for spatial relationships is investigated and the seemingly boundless space of the prototype is discussed. Fragmentation in the news space is detailed, both of the space and the items within it; organisational structures are considered, the potential for macro and micro readings of the space is investigated.

The new electronic writing space promotes a sense of geography and of territory; a familiar space to which we can apply certain concepts in order to understand it more fully. A connected computer screen allows a fraction of this space to be visualised; glimpsing only a fragment of the whole. The n-space is notionally, a mediated, fully linked demarcation within the electronic writing space.

5.1.2 Conceptual hard structure

The previous study of news on the Web detailed its conceptual hard structure; discussing the notions of space and of topography that it seems to offer its readers through its 'n-space'. This spatial metaphor - itself a symptom or outcome of this news signal's residence in the networked digital writing space - can be extended and investigated as an environment or location of and for electronic news; within and through which it (news) is navigated, viewed, read, or listened to.

This prototype's conceptual hard structure follows the metaphor introduced by Web news. This n-space is 'the boundless or continuous expanse in which all objects exist and move'; a seamless signal accessed through the optical device of the screen, the fundamental technology of the videosphere. This term 'space' implies and acknowledges a dimensional, geographical landscape in which specific things happen. It also therefore recognises a temporal factor. The n-space is close to Tufte's (1990) model of a 'narrative of space and time', "...report(ing) on the world's workaday reality of three-space and time." (p. 97) Like a transport system timetable, this n-space attempts to record and describe the complex narrative of news information - taking place in both space and time - in an overall pattern of communication design.

5.1.2.1 The spatial arrangement of text and information landscapes

The computer screen presents the user with a space in which text and images are arranged according to a number of criteria; the visual communication of these items on the screen essentially signals the relationships between each item and plays an important part in the communication of such qualities as priority, hierarchy and a scale of values.

Small (1996) discusses and outlines a system similar to that in use in the n-space. The major difference between the n-space and Small's work in producing the 'Virtual Shakespeare' 'information landscape' is his embracing of the explicit use of typography in three-dimensions. However, his outline of the 'information landscape' (after the work of Dr. Muriel Cooper, founder of the Visible Language workshop at the Massachussets Institute of Technology Media Lab) is an important contribution to the theoretical groundwork and basis for the communication of information in the n-space.

> "A landscape, whether real or virtual, provides an experience in which context is continuous and meaningful. It is through context that we can understand new information and can relate it to what is already known." (Small 1996, p. 516)

In this type of information landscape, meaning is ever-present, providing each element in the space with the context it requires. Superficially, the n-space presents the user with a flat plane, upon which headlines are hung. Initially, these items may seem as if little thought or care is involved in their position on-screen/in the space. In fact, each item is visualised according to a number of criterion. Context is essential to news, and by placing connected news stories together, a degree of context is provided (hypertext supplements this). A global organisational structure is also important in the provision and maintenance of context. Television, print and Web news all use a similar system when organising their news into discrete portions; headers on the printed page and screen and iconic backdrops or spoken titling, for example.

The idea of a continuous experience of context is essential to reading news in the n-space, as Small comments

> "...(I)nformation "hangs" like constellations and the reader "flies" from place to place, exploring yet context while moving so that the journey itself can be as meaningful as the final destination." (Small 1996, p. 516)

Context, in a system based on the notions of topography and spatial organisation is provided through the network of relations that exist when information is arranged on any surface, or in any space. Small discusses "meaningful landscapes" where "...we can arrange information...(and)...exhibit qualities of mystery, continuity and visual delight." (Small 1996, p. 516)

5.1.3 Space

The n-space positions and presents news items in or on its conceptual hard structure, forming a pattern of communication design that isn't without meaning. Each item or element that has been visualised in the space, is loaded or is meaningfully located in it. The position of an item depends on a number of variables, some of which are outlined below. Global and local systems for location of a news item will be discussed and appraised.

The flatland of the screen enables the presentation of news items according to three distinct systems or structures of and for ordering information; of visually structuring and presenting information.These methods relate specifically to three dimensions or axes in space: X, Y and Z (vertical, horizontal and diagonal/dimensional, respectively). By utilising the axial concept, specific information - concerned with the information being presented - can be signalled. The following points discuss some of the key issues raised by the use of these axes to communicate distinct qualities of and about news.

5.1.3.1 X-axis

Organising and structuring information along the vertical (or x-) axis allows a number of points, levels or qualities of information to be signalled. Verbal written or printed information is structured linearly. Vertical organisation is largely associated with a hierarchical sense of high and low, up and down, with top and bottom priorities. Traditionally, importance is signalled in printed news by an item's placement at the top of the page (although to be more specific, the horizontal axis is also employed: the most important item being placed in the top-left hand corner, perhaps recalling the explicit visual structures of the written word), the top of the story being the start; implying a relationship with time (news coming down the wire was communicated with the most important items first). Lists, tree diagrams or family trees all follow these hierarchical structures of reading; of a chronology of information - beginning at the top and working/reading to the bottom of the page/diagram.

Here (fig. 5.1.1), a straightforward (numbered) order for reading or reading path is signalled and suggested by the news items' (pictured as spheres) vertical pattern. This structure follows hierarchical systems predominantly utilised in printed texts/diagrams. Of course, this hierarchy is superficial; it guides the reader, working with the horizontal axis to establish a two-space matrix.

From this theoretical outline, the vertical axis or organisational structure in the n-space utilises this presentational system of chronology; with items which appear above or below one another occurring either before or after the item being read (fig. 5.1.2).

In the space's active state - when the reader is navigating and reading the news as opposed to sitting back and watching it - a number of links can be visualised once a specific item is selected. These connections surround the selected item, and again follow the rules of organisation previously outlined (fig. 5.1.3).

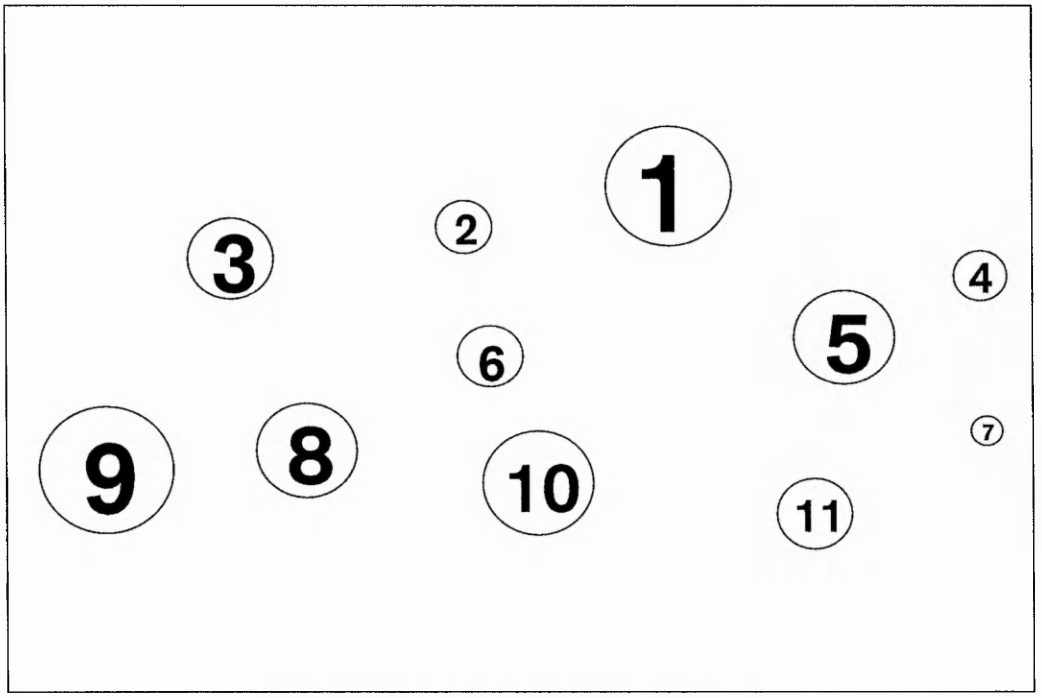

fig. 5.1.1: organisation and visualisation along the x-axis

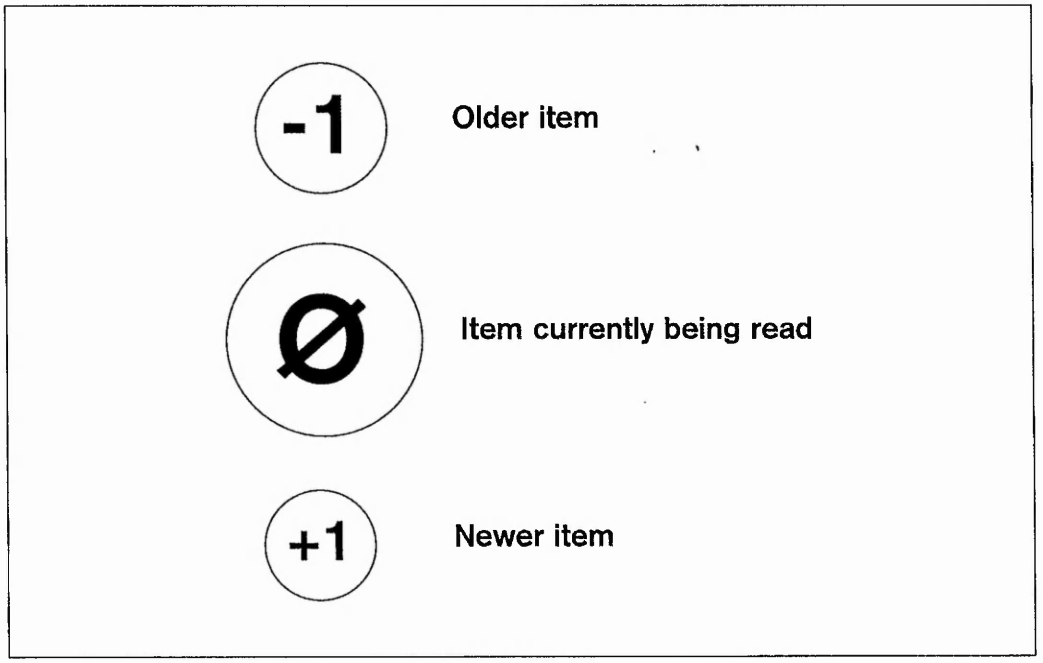

fig. 5.1.2: the presentational system of chronology utilised in the n-space model

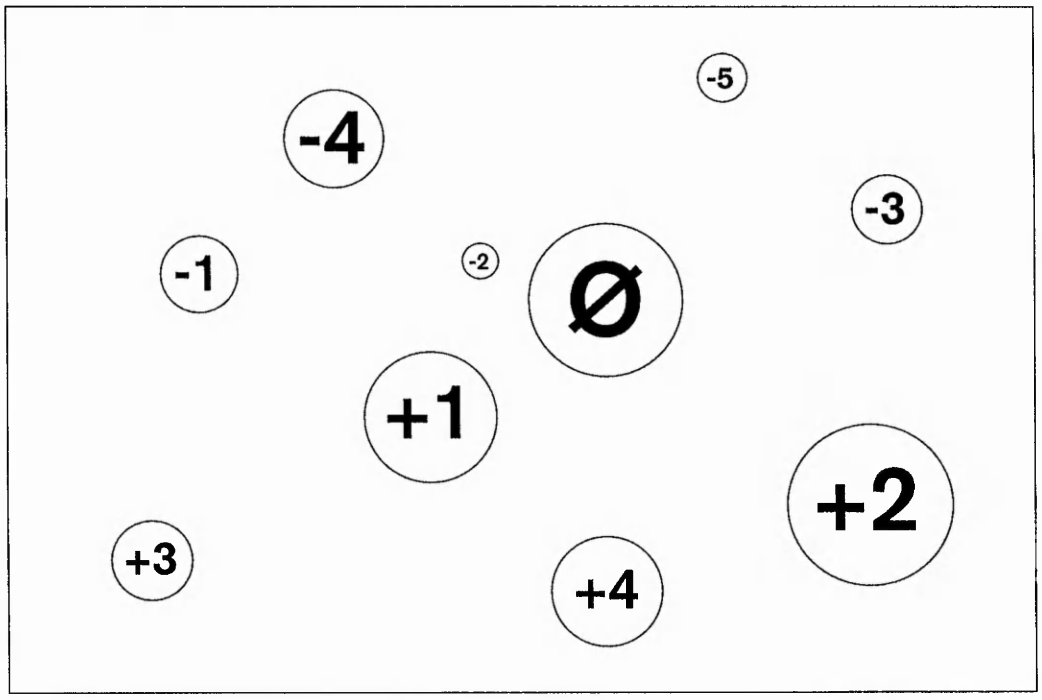

fig. 5.1.3: links visualised according to the x-axis' rules of organisation

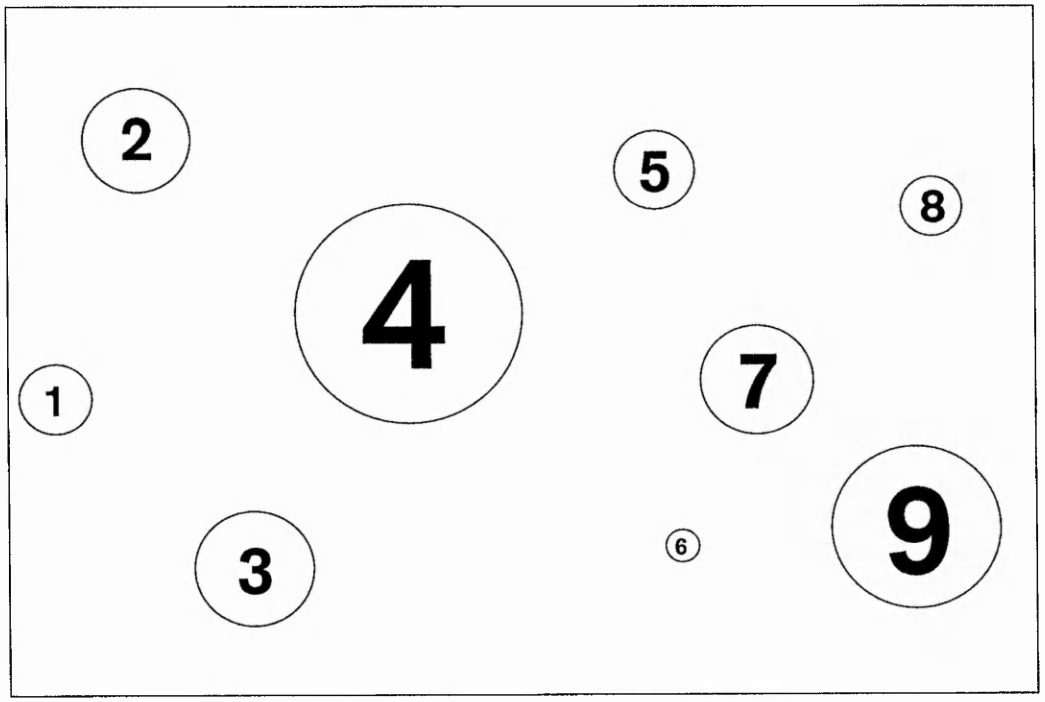

fig. 5.1.4: horizontal, or y-axis priority values

A distinction now needs to be made between the space in it's active or passive state - a full outline will appear later in this text. The model's passive state can be defined or described as something which is looked at, its active state as something looked through. The passive condition of the space recalls television and the objective, uncontrolled stasis of the newspaper page, where items are positioned in the space, as and when they happen, according to specific organisational principles. The space can be browsed, its item's read but no active participation in the mesh of networked news events occurs. It's active condition allows the user/reader full use of the potential for electronic, hyperlinked reading/viewing in the flexible n-space; the space responds to subjective reader/user navigation bringing new items into the space as an answer to reader interest, presenting connections, being constantly defined and. redefined. As the reader moves through the n-space, activating it's active state, newer news items are still brought into the space as they happen: the active condition therefore being a combined passive/active mode.

5.1.3.2 Y-axis

The y-axis - the horizontal plane - signals a quality to the information primarily concerned with thematic or conceptual linkage communicated via distance or space. Globally, distance between items communicates their relative similarity or difference in terms of subject or theme therefore gradations of distance imply varying degrees of thematic or conceptual linkage.

Placing news items at various points along the horizontal axis can signal an order or hierarchy to that information. Fig. 5.1.4 presents a superficial reading of the horizontal plane's priority-values. A combined horizontal-vertical reading would of course differ, recalling the printed newspaper page.

As has been noted, left and right (hand sides) have inherent organisational rules dictated by their use in verbal communication, specifically writing and print. These closed, chirographic language technologies have established dominant cultural codes centring around importance and priority of information located in accordance with certain spatial rules. An object, element or item placed at the top, left-hand corner of a newspaper page - as we have noted - is deemed as most important. Being placed on either right or left hand side of an item signals significant qualities to that information. The n-space's rules dictate a global/local, right/left cleavage or split. For example, items to the central item's left are (more) local items - more narrowly contextual or connected - whereas items to the right of an item are global, broader in context. In this way, the left hand side of the space can seem contracted or compressed as a solution to the problem of scaling is addressed, and as a technique for micro/macro visualisation of items in the space is defined. Thematic organisational and topographical - rather than hierarchical - readings are possible (fig. 5.1.5).

This method for contextual linkage relies on a straightforward spatial reading to dictate connection or relevance. However, its local/global cleavage - as shown above - allows a sophisticated pattern of news items to be presented to the reader in the n-space model. In this example, items A, B, and C are - thematically- more close to the central item Ø than 1, 2 or 3 although a superficial reading of this pattern might produce different results.

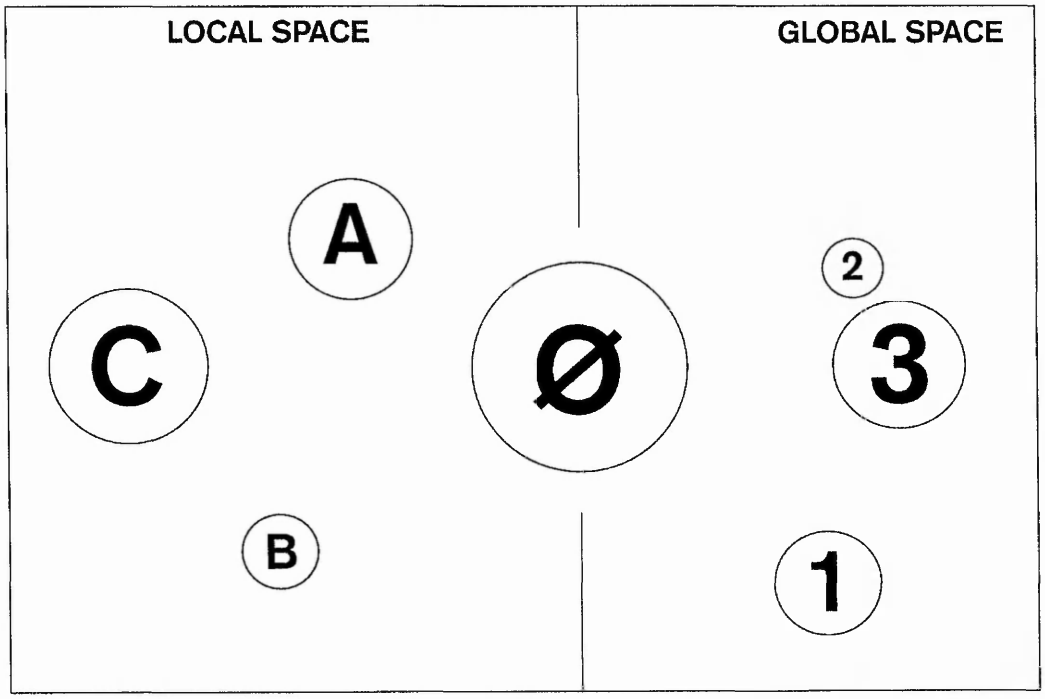

fig. 5.1.5: left and right placement

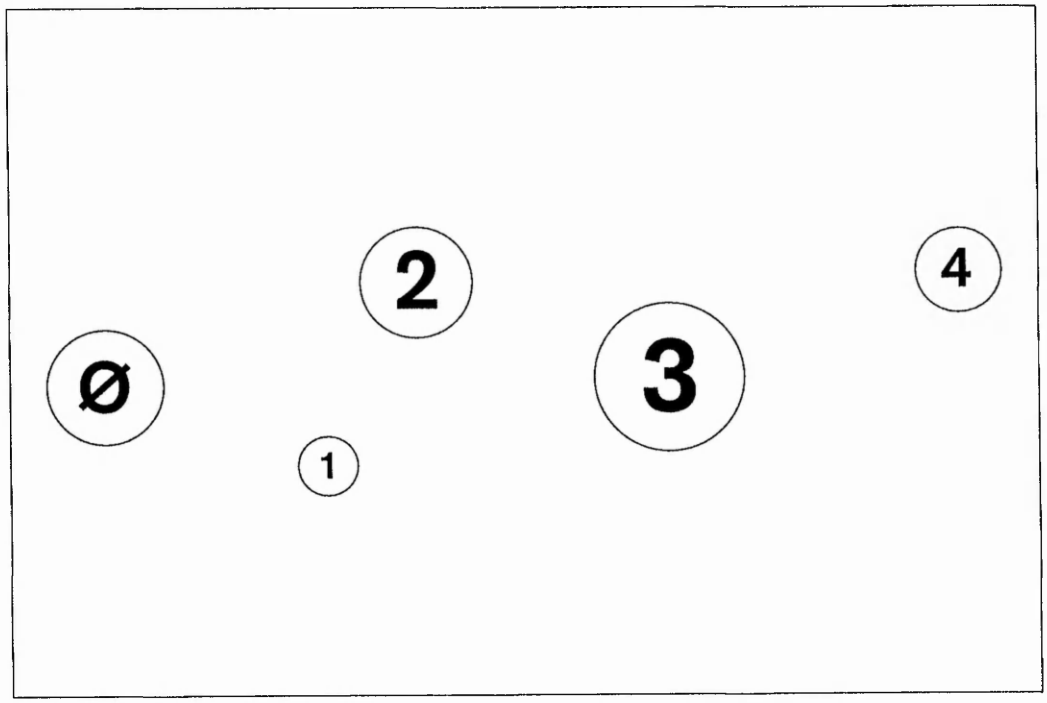

fig. 5.1.6: four items in global space

To assist clarification and to limit confusion, this option can be activated or deactivated at the reader's preference. The ratio of spatial compression to the right of the central item - directly effecting levels of thematic connection - may also be altered, producing differing textures of items in the same space.

In fig. 5.1.6 four items are visualised in the global space of the central item Ø. In this instance, the level for thematic or conceptual connection is low, only a small number of items are shown: those with a more direct connection to the central item.

As the level is altered - and the number of connections increased - items with less direct connection, or those items considered less essential or less directly relevant to the central items are introduced. The figure below illustrates this more complex pattern in the news space model. As mentioned previously, this facility for altering the contextual ratio, for deleting or introducing thematic connections can be altered at the reader's discretion, or turned off in which case the right hand side of the central item would - mirroring the left - visualise connections on a local scale.

5.1.3.3 Z-axis

This axis - unavailable in the flatland of traditional printed news - is more widely seen in n-spaces whose interfaces are dependant on the hard structure of the screen. Computer software, for instance relies upon the notion of windows which allow a flexibility in terms of being able to position interface items in front or behind one other. Television news, while resisting the potential for manipulating the screen along its z-axis, often includes elements in graphic sequences which seem to move in and out of the screen.

The n-space model actively encourages the use of the z-axis in the communication of news. By placing items (or elements of items) in front or behind each other, new hierarchies and unused or unfamiliar systems of priorities are introduced. The three-space which an environmental or topographical metaphor advocates is used in the n-space model to signal specific qualities to the information being presented, and to communicate the sense of an 'information landscape'. This use of perspective and distance in the model aims to - notionally - reflect inherent qualities of news, including time which is discussed below.

Fig. 5.1.7 illustrates the n-space in its passive mode; items are placed in the space according to pre-specified reader-driven rules involving personalisation and prioritisation. A hierarchy is again superficially signalled in the numbered ordering of these news items, seen as spheres. Distance, into and out of the space is signalled - initially - by size. Items on a landscape, information or actual, are subject to perspective and foreshortening, with larger ones 'closer', seemingly more important than those farther away. In the n-space model, therefore, the z-axis primarily signals priority. Size equals importance and each item's priority-values follow this rule.

Items on this axis can be selected, isolated and brought to the fore; their visualisation being a guide to an objective hierarchy. This crossing-over to the n-space's 'active' mode of communication redefines the role of the z-axis slightly. Once an item is selected for reading -

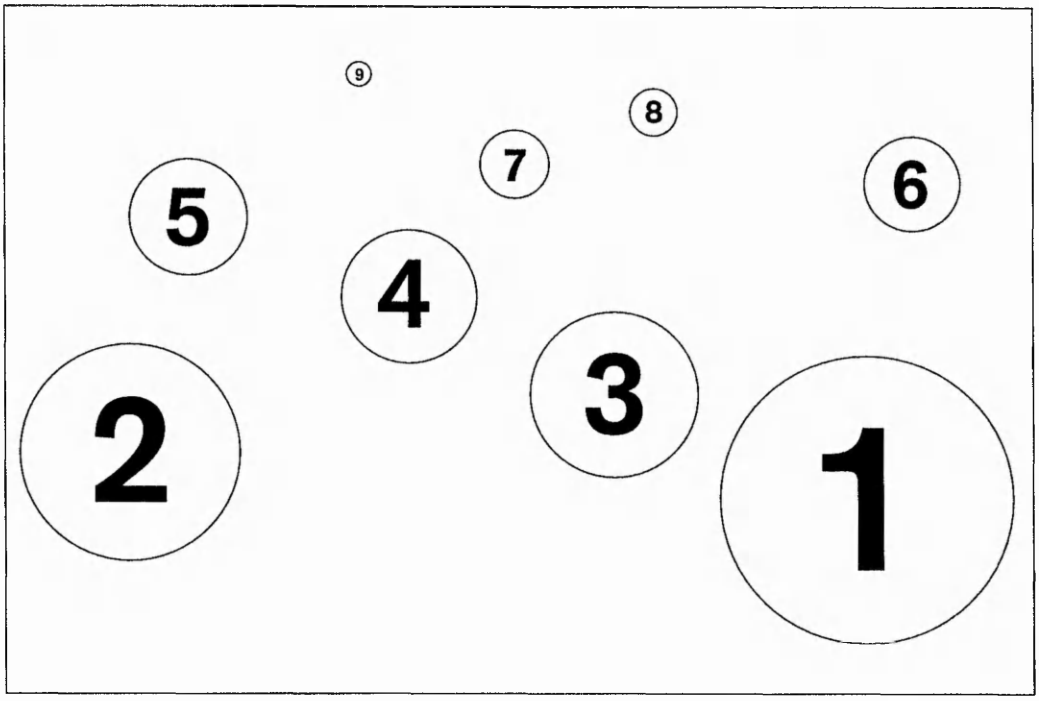

fig. 5.1.7: signalling hierarchy on the z-axis

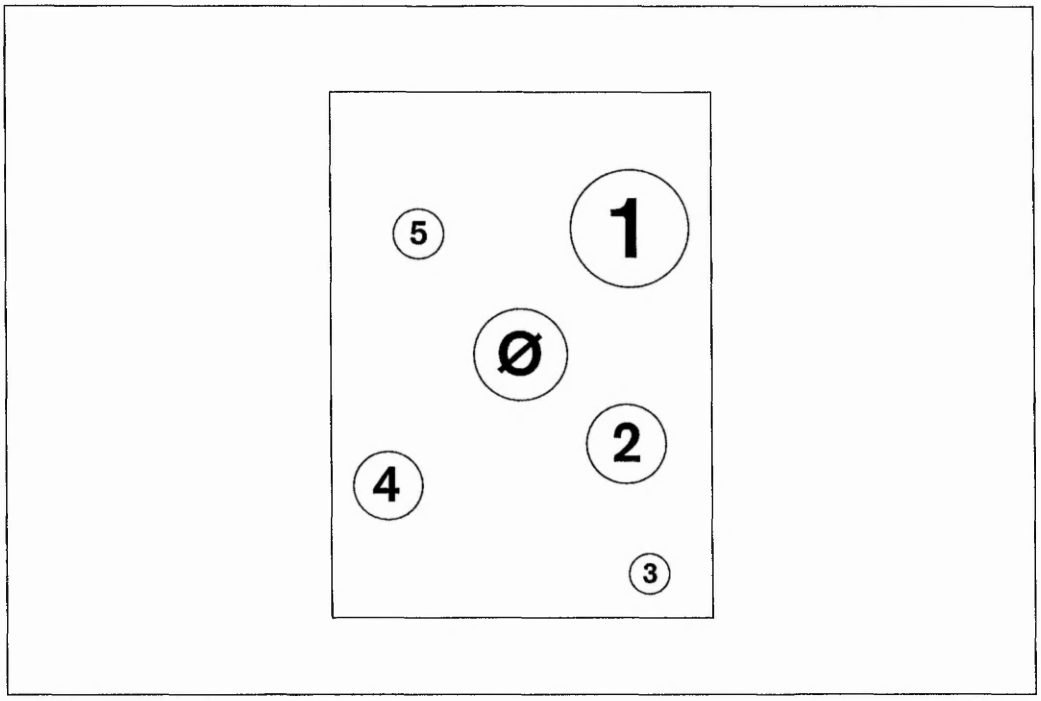

fig. 5.1.8 - 5.1.10: selecting news items

becoming the nominated central item - it is surrounded by other, thematically connected items. These too are available - potentially - for selection and transformation into the new centre. If this path is followed, the old central item - and its associated connections - are moved along the z-axis, towards the back of the n-space.

In fig. 5.1.8 the central item Ø is surrounded by five numbered, associated sub-items. Upon selection of sub-item four, the other sub-items and the previous central item are 'sent to the back' (fig. 5.1.9). This process is visualised by their being greyed-out, signalling their backwards movement. Individual greyed items can be reselected, (fig. 5.1.10) pulling them back toward the front of the space and restoring their tone to black while the deselected item is greyed-out. In this case, sub-item two is reselected, bringing it to the fore while sub-item four is sent to the back.

5.1.4 Moving centres

From the above discussion of the use of the z-axis to signal a layered pattern - communicating a explicit hierarchy through a pseudo third spatial dimension - a more complex, tiered information landscape can develop, one centring around the notion of the 'moving centre'. This idea is vital in the navigation of the n-space model, relying on the z-axis as the means to anchor the reader in the space, supplying an aid to location and providing the reader with a map or series of links to older, previously viewed news items.

As I've outlined above, items can be selected and deselected in the n-space model's active mode. A more thorough discussion of this system for navigation is explained later in this text. The selection of one item for reading moves that item to the centre of the screen mirroring the readers centre of attention. Connected sub items surround the selected item as unselected items are sent to the back.

In fig. 5.1.11, six headlines are visualised - shown here, again as spheres - in a fragment of the n-space. Each numbered news item represents one headline. In the n-space prototype, associated elements are presented with the headline on the model's point of entry - date and time, byline and sub-heading, for instance. The n-space's 'front page' will be discussed later in this text.

Each headline occupies a point in the n-space. No central item has been selected; the space is shown in its passive mode, items can be browsed at the readers own pace. New items are included in the space as their reports are filed: they cause disturbances or ripples as they enter the space and older items are rearranged or repositioned.

In fig. 5.1.12, headline three has been selected. It, and the surrounding headlines are repositioned in the space so it is centred on the hard structure. This item and its associated elements have become the reader's centre of attention, fixed in the space. By the action of selection, the n-space has crossed over into the active mode.

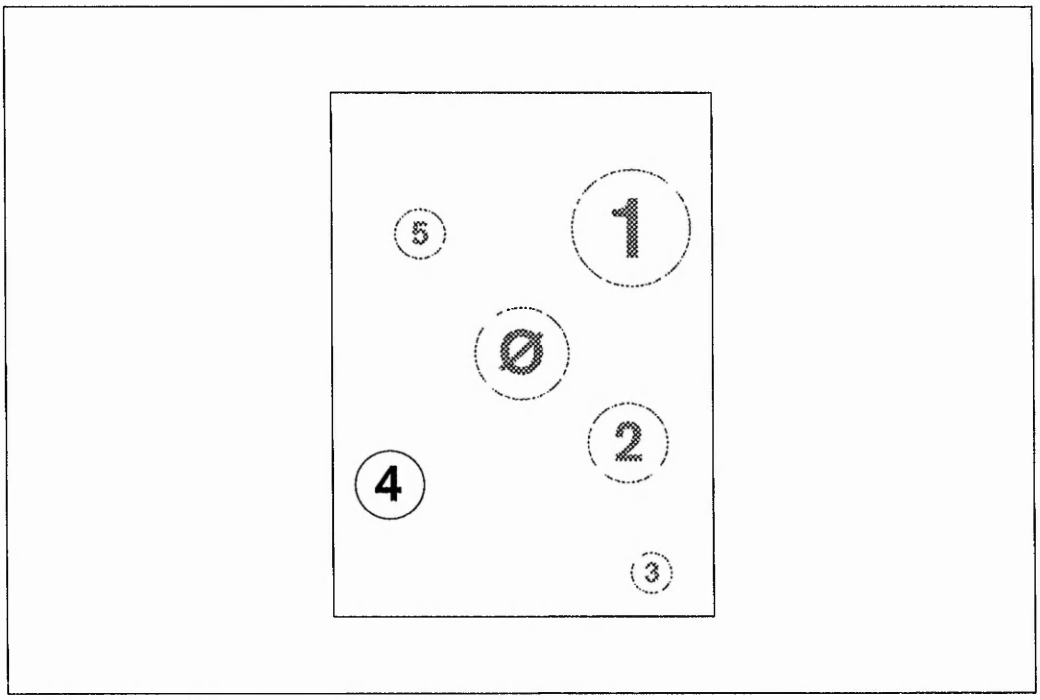

fig.5.1.9

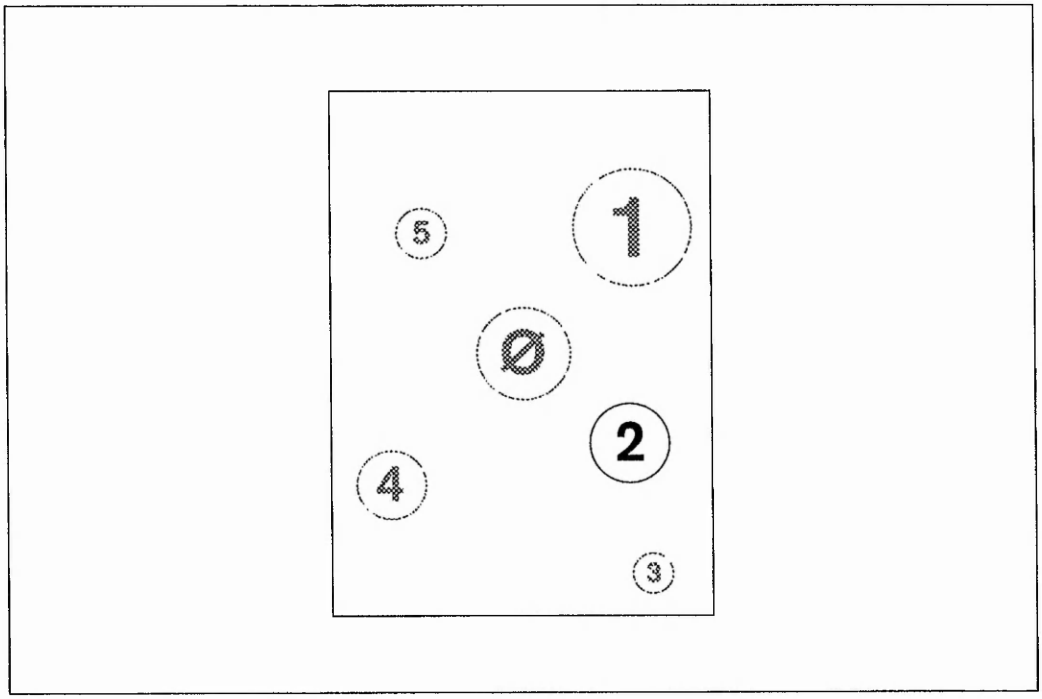

fig. 5.1.10

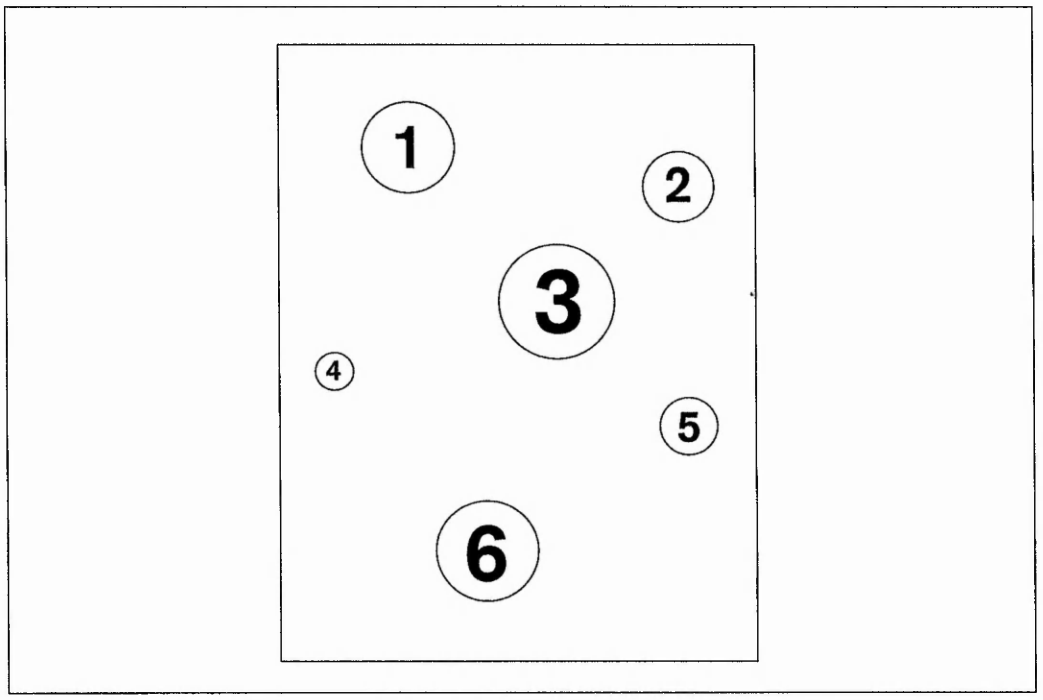

fig. 5.1.11: six headlines

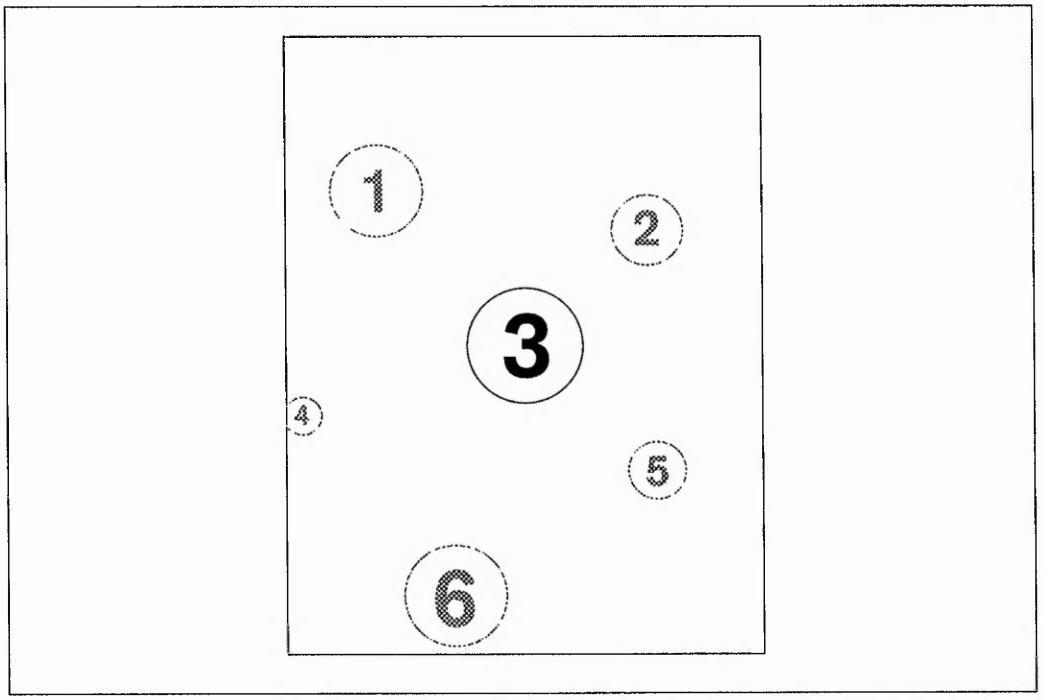

fig. 5.1.12: selection and repositioning

The other unselected items in this fragment of the space have been greyed-out and sent to the back where, as shown earlier, they can be reselected and brought back to the fore.

On its selection as the central item (fig. 5.1.13), item three's associated items - linked or connected headlines - are visualised in the space (spheres A - F). They are positioned at the front of the space, at or on the same hierarchical level as the central item.

The reader is therefore presented with the item in its informational context, with associated news stories - items which could share a contextual, temporal or hierarchical connection - arranged around the central item in a significant pattern.

On selection of item E - one of the six connected sub-items - it becomes the new central item (fig. 5.1.14). The space repositions the items on the hard structure: item E is centred. Items 3, A - D and F are greyed out, sending items 1, 2, 4 - 6 further to the back of the n-space.

Following this movement, a new set of connected sub-items or headlines is presented in the space around the new central item. The process continues as new centres are selected, or as an item is investigated and read.

This notion of moving centres is essential in the n-space model, reflecting the intuitive reading process inherent in printed news. The mechanics or process of reading an individual news item or story are outlined later in this chapter.

5.1.5 T: Time

Although time is represented as, on or by the x-axis in the n-space model, it remains a variable and an essential component in the space itself. In effect, each axis can visualise time, in a complex pattern of spatial relationships. While the prototype adheres to the x-axis as the main means of judging an items position in time (through its place in space), late-breaking or important news items need to signal their 'new-ness' explicitly, rather than take their place in a queue or list of items.

An integral aspect of electronic news is the facility for streamlining or narrowcasting the current glut of news items, reconfiguring that broad-cast into one in which the readers likes, dislikes, wants or needs - in terms of news stories - is reflected. It is with this knowledge that the current discussion of the n-space acknowledges the coming development of news filters or intelligent agents whose function it is to perform this narrowcasting, presenting the reader with a 'treated', selective sample of news. Therefore, if a news report is filed, and corresponds to a readers pre-specified important or significant news themes or subjects, then an updating of the n-space to include this item is vital. The n-space model signals this importance in two ways.

New items are signalled ordinarily via the x-axis. However, if an item is being read - the n-space in the active mode - and an update or new associated item is reported then this item is accommodated in the space of the item being read, and not necessarily above it. For instance, in

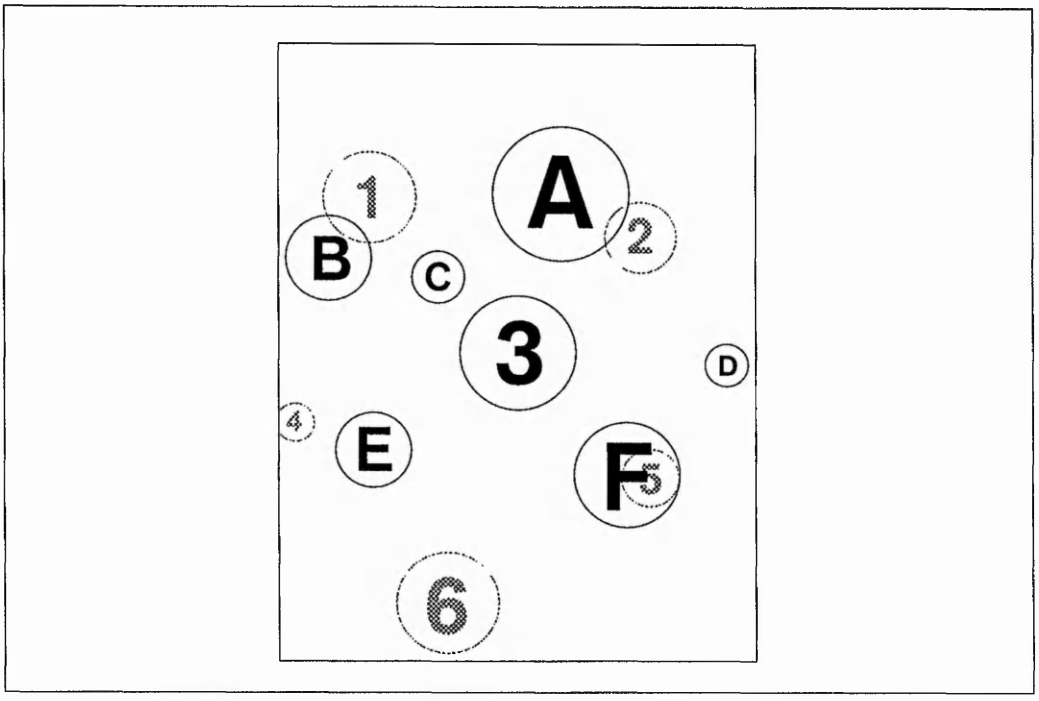

fig. 5.1.13: associated item visualisation

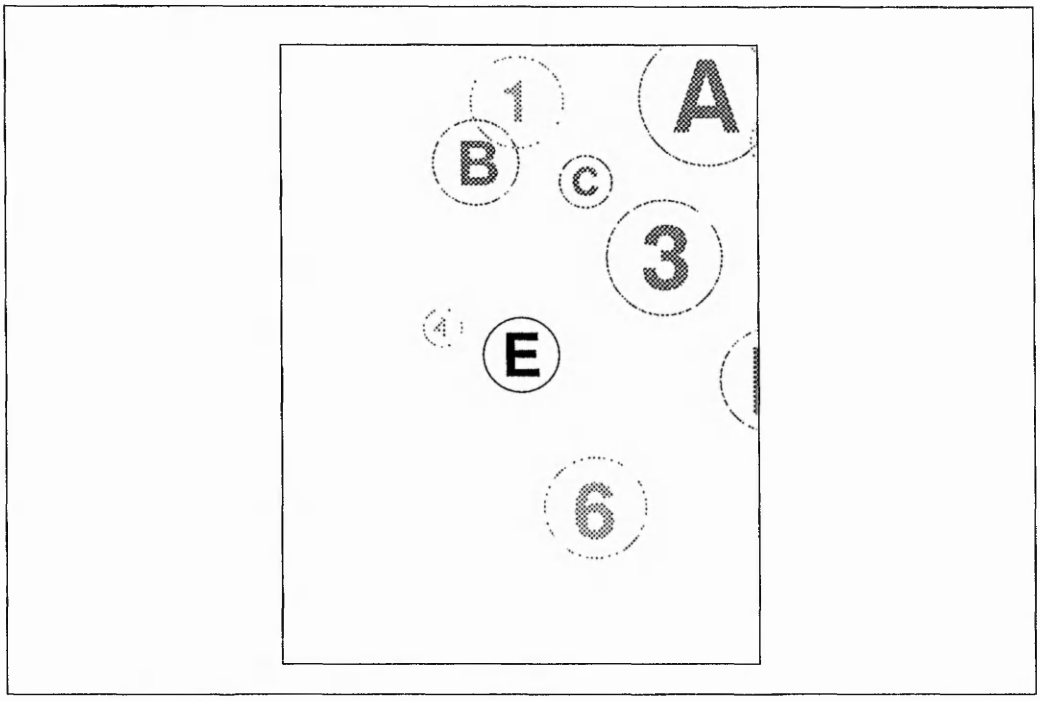

fig. 5.1.14: new central item

fig. 5.1.15 a central item is surrounded by a number of contextually linked sub-items.

After a period of time during which the central item is being read, an update of this item has been filed and is included in the n-space, in the immediate viewable area of the central item (fig. 5.1.16).

The two covered items remain in the background, the newest item asserting its relevance and ability to be up-to-date. In addition, the two older items can be moved to the side, and repositioned at other points in the space.

As another means of explicitly signalling an item's point in time, each news report is tagged with its time of entry into the space. Therefore, if a pattern of the x-axis is disturbed, each item has an attached sign denoting its age. Although not featured outlined in detail within the n-space prototype, it is conceivable that , with a knowledge of their times of entry or reporting, each item, on its appearance in the space would subsequently be aware of its point in the space. In terms of the example above, the two, older items sent to the back would automatically reposition themselves, moving to their relevant points on the x-axis. Since this is not detailed in the n-space model, the z-axis is used to signal their age.

5.1.6 Spatial relationships

The news space prototype signals a clear narrative structure through it's superficially fragmented visual space. By it's use of a system for organising information spatially, those (spatial) relationships formed communicate specific qualities about the news text . The X, Y, and Z axes each describes a given attribute for information presented along or on it. On a macro level, the pattern that news items combine to form yields a complex network of relationships between those items; more specifically through their spatial associations.

As I've discussed, information visualised on any one of these three axes - horizontal, vertical and foreground/background - can signal organisation by a combination or selection of them, according to chronology, theme or context, and priority. By combining the use of these axes, forming one pattern or display, a multifunctioning union of communication design is configured.

In fig. 5.1.17, nine news items are visualised in one fragment of the space. Their varying sizes signal an immediate hierarchy, one following the interiorised dimensional system used in print. Spatially, a series of connections can be made: those items placed nearer to each other have an obvious thematic or conceptual link, those at the right or left of each other again communicate a linkage according to theme (signalled by a unbroken line). Those items above or below each other signal a temporal hierarchy - the topmost items being the latest (signalled by a broken line). One item connected to the seven others (signalled by a dotted line) is - in the space - placed behind them; it's importance or priority in connection to the seven linked news items is indicated by being faded or sent to the back. In the n-space prototype, this is signalled by that item being presented in a shade of grey. This system will be discussed in greater detail later in this text.

fig.5.1.15: central item and contextually linked sub-items

fig. 5.1.16: updated news item enters the n-space

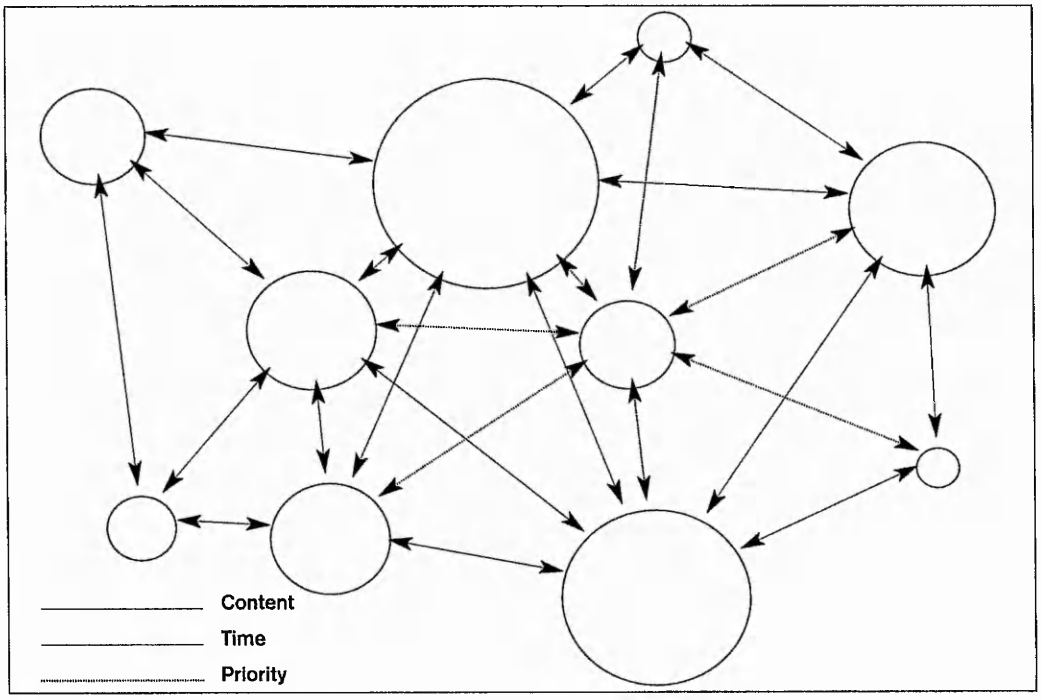

fig. 5.1.17: spatial relationships: content, time and priority

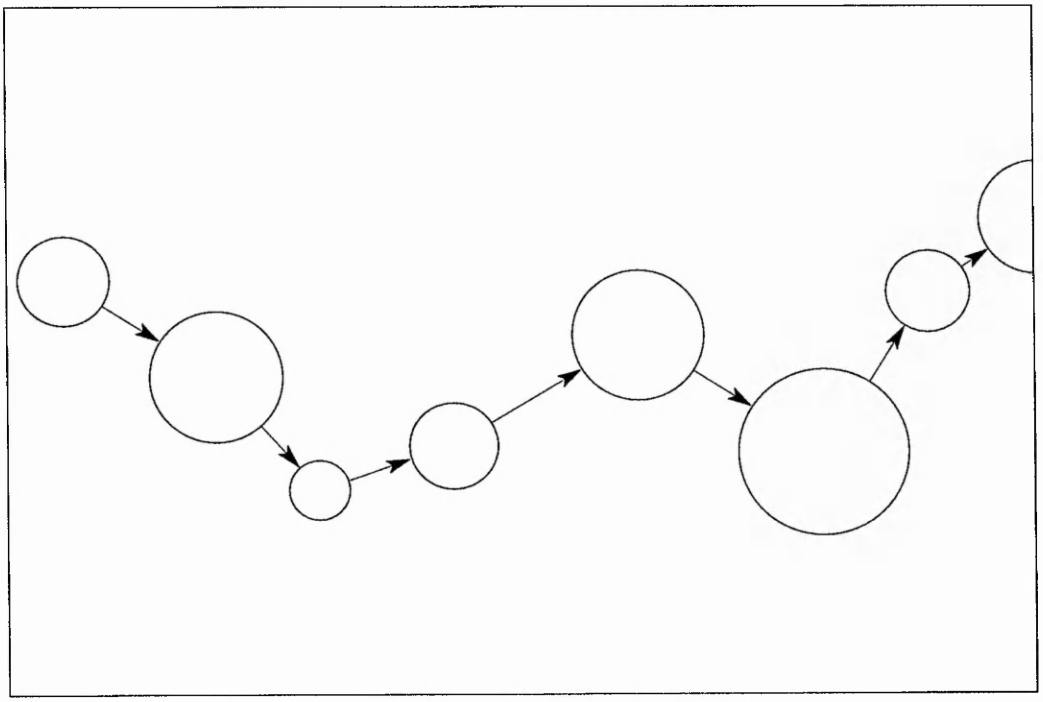

fig. 5.1.18: linked items in space

5.1.7 Scaling

> "Proposed replacements for the desktop are few and repetitive. I came to lump them together in three categories: spatial, semantic and networked."
> (Steinberg 1997 p. 205)

Steinberg's article, concerned with the development of a user interface centring around a temporal organisational system ('Lifestreams' under computer science professor David Gelernter at Yale) categorises three distinct sets of user interface research whose intention is replacing the desktop metaphor currently in use. 'Spatial is the largest by far' he notes, before going on to discuss organisation by content (semantic) and by means of a linked network of items.

In his dismissal of a spatial system for the effective arrangement of information, Steinberg flags the problem of 'scaling'; specifically "(H)ow do you represent such a huge space on a small screen?" (p. 205) The n-space model is founded on a spatial metaphor - although in terms of Steinberg's classifications, it combines all three utilising or being based on a spatial/networked/temporal system for organisation and visualisation- addressing and confronting the problem of scaling by admitting that techniques or attempts to represent a huge space on a small screen are almost bound to fail. Instead, the screen presents one fragment of the huge (news) space, the reader is free to navigate the rest of the "...dream geography of data space." (p. 205) Two distinct views of the space are available, however; a far-off (or macro) and a close-up (or micro) view. These techniques will be outlined later in this chapter.

5.1.8 Boundaries or limits in the n-space

The n-space is seemingly limitless or infinite; on or through or in it's conceptual hard structure, the impression is given that any or all boundaries have been removed, that no global limits seem to exist or have been set; it is apparently boundless. For instance, a set of links can be followed - from item to item - across the space, in one direction (fig. 5.1.18).

In fig. 5.1.19, a set of unidirectional links are shown. The reader follows these links, making connections between items or elements according to interest in the series of links presented. These eight links might fill the viewable area of the reader's screen: one type of boundary is acknowledged. However, as more links are made in that direction, the screen - and space - pans right.

This movement across the space continues as long as links are made. It is conceivable that the reader might eventually be presented or come back to the link from which they started; the space's conceptual hard structure therefore resembling a sphere rather than a flat plane (fig. 5.1.20).

The illusion of infinite space is just that. The sense of movement engendered by the space is one of movement across a space that has no limits in terms of it's geography, yet as this

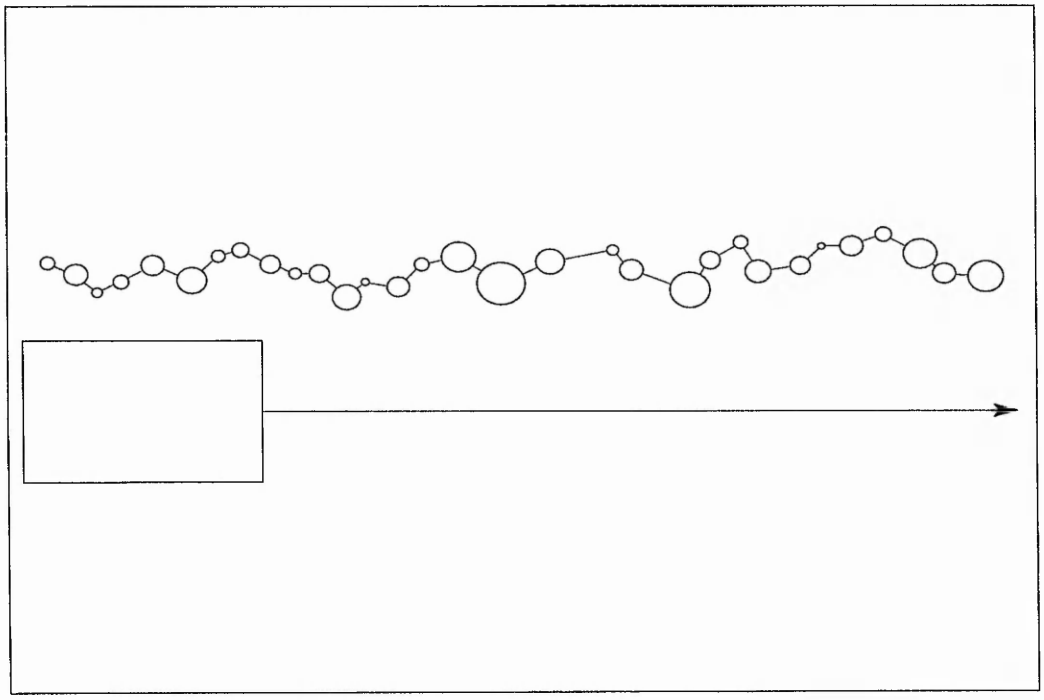

fig. 5.1.19: screen following link pattern

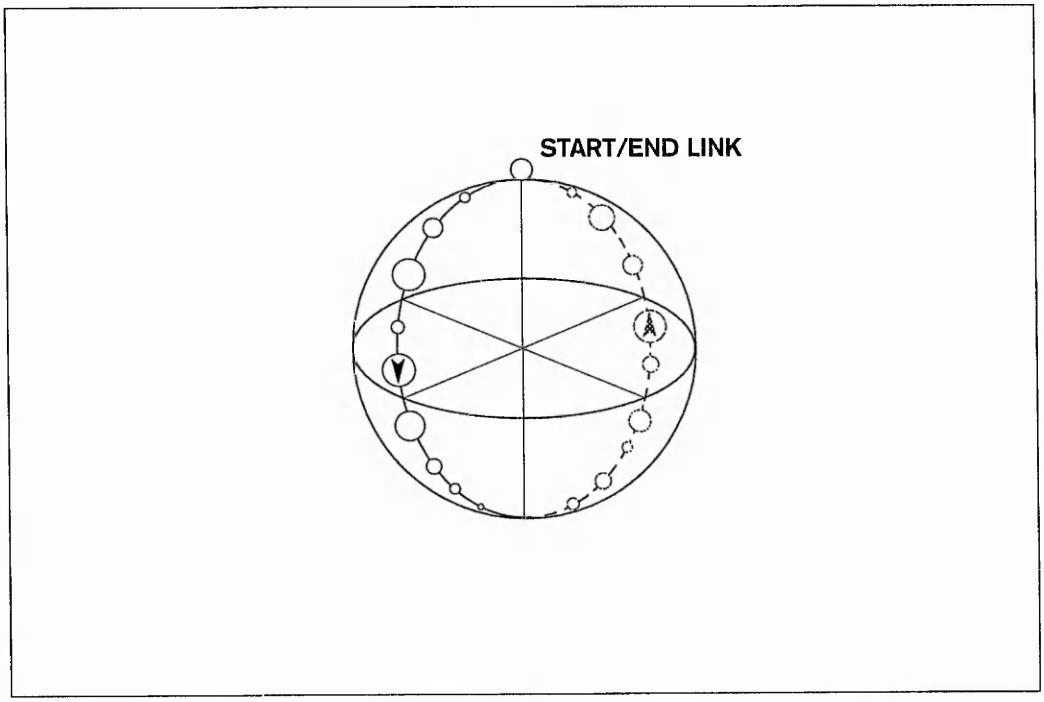

fig.5.1.20: n-space's conceptual hard structure

example illustrates, boundaries and limits do exist although none are explicitly signalled (fig. 5.1.21).

Pathways along which links are made are necessarily finite structures. Each node in these hypertexts has connections to a finite number of other nodes. Each of these has a finite number of links and so on. Therefore boundaries do exist, both spatial and conceptual or thematic. Potentially, every (linked) news item that has ever existed can be presented in the space, acknowledging the limit or boundary that is the finite, exhaustible resource of news. A limited number of - newsworthy - events occur which can be reported on, although in the notional (or utopian) case of the n-space, the potential for each user or consumer of news to be a producer will have emerged, allowing each person to broadcast their own news. Other limits then emerge: of access to technology, and eventually the number of people willing or capable of presenting their own news.

The n-space is not a closed space in the sense that printed news' conceptual hard structure imposes limitations upon it's 'viewable area'. No relation is made between screen size or of hard structure to the objective sizes of items in the space. Traditionally, limits imposed on news by page or screen size have been one of the means by which priorities have been recognised and reported. However, with the rules for this firm structure breaking down in the n-space, other methods have emerged in order that an item's importance can be judged. For instance, an item may be higher in news-priority if it has a greater number of links to or from it. This idea of connection or 'link potential' signals a subjective popularity rather than an objective imposed hierarchical sense of attributed importance.

Passive movement - movement during which no news item is selected - might lead to the space's edge; if no new news occurs or if the limits of news are reached. As previously admitted; news is a finite resource.

Active movement; navigation or reading is also seemingly boundless. Following links - getting caught up in a hypertext - leads the reader/user from item to item; across a network of seamlessly linked items. Besides moving spatially, the reader moves conceptually or thematically. Both conceptual and 'physical' spaces are limited by the number of links that - potentially - can be made.

The reader follows links and moves across the n-space; this sense of bounded yet seemingly limitless travel promotes a sense of travel, movement; and of a topographical surface. This surface can be thought of as spherical; following links can result in the reader returning to his/her point of departure, along a number of different paths across the network.

5.1.9 Fragmentation in the n-space

The electronic n-space communicates through a seamless topography or environment. This impression of a unfragmented space, containing unfragmented items is false since each stage in the process of browsing and reading an item moves along a chain of related fragments.

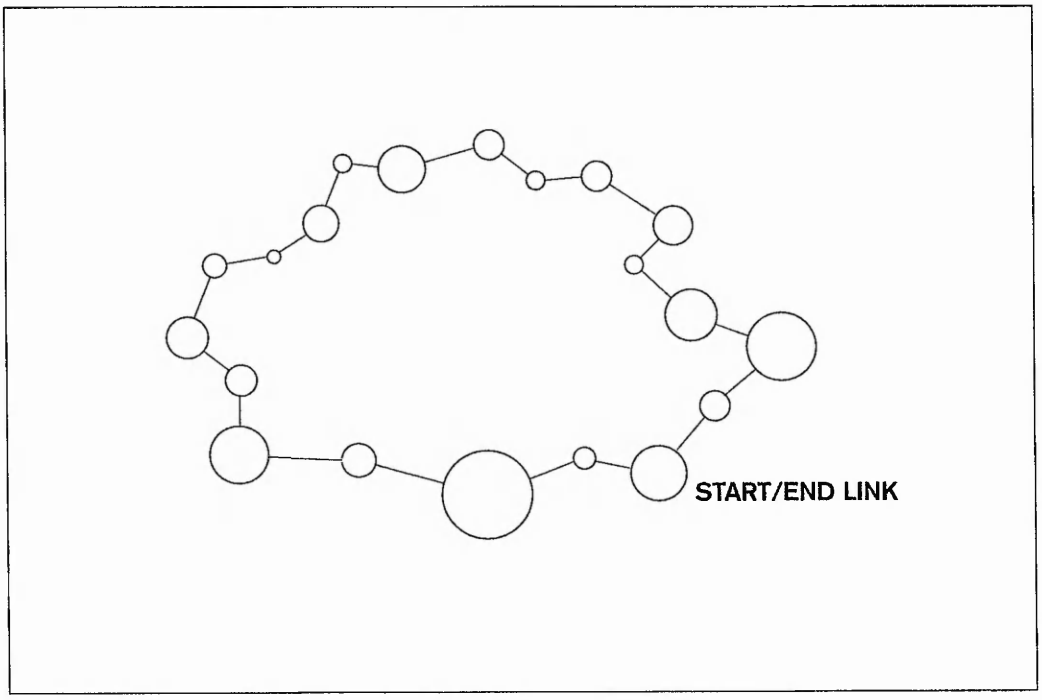

fig.5.1.21: implicit: boundaries or limits

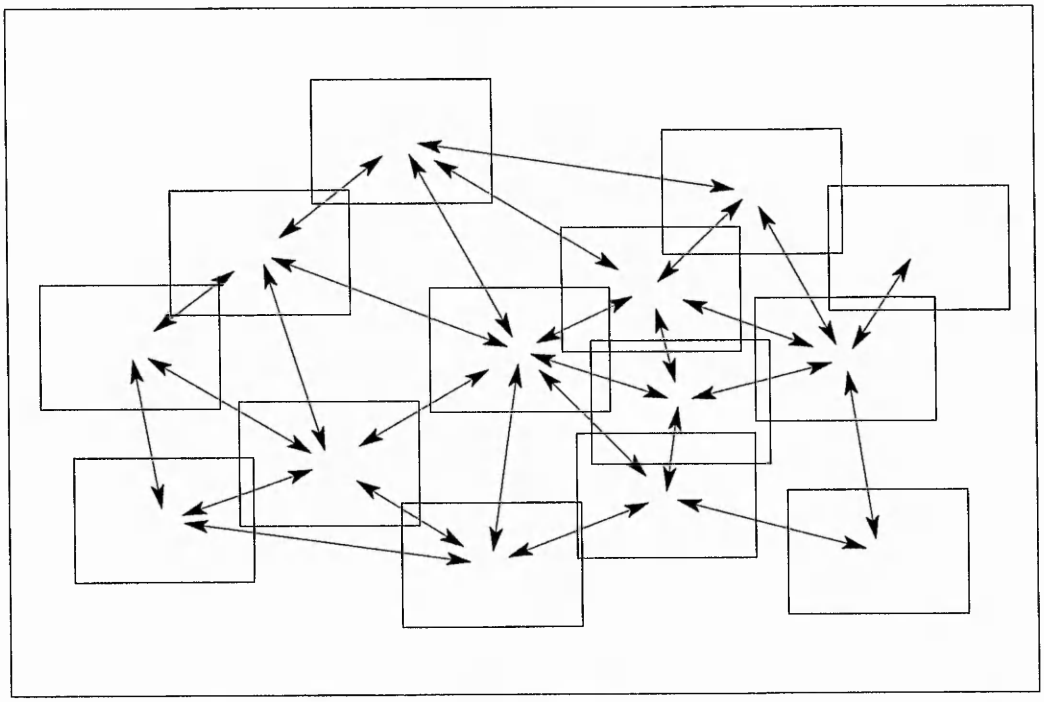

fig. 5.1.22: fragmented n-space conceptual model

Previously, fragmentation has been discussed in terms of macro and micro firm structures, those organised systems of soft structures concerned with the fragmentation and arrangement of a signal or space and an item, respectively. These labels are are again used when the fragmentation of elements of the n-space model are discussed.

5.1.9.1 Fragmented n-space (macro firm structures)

The n-space model follows a spatial metaphor, embracing the seemingly boundless space in which electronically delivered news is presented. The macro firm structure that is the news signal - the n-space - can be identified and discussed. As was outlined when the n-space's conceptual hard structure was investigated, news is consumed in screen-fuls of information. The n-space itself, therefore, is fragmented in a manner resembling the conceptual hard structure of Web news. The screen is a window onto the space - a viewing device - through which fragments of the space are read.

Fig. 5.1.22 illustrates the conceptual model for the fragmented n-space. The screen moves across the surface of the space, in any direction. Each screen is one element of the viewable area. This illustration signals only a limited number of possible movements, but the capacity for movement is obvious.

Fig. 5.1.23 represents a variation. Instead of omnidirectional movement around the n-space, the readers capacity for movement is restricted to unidirectional, linear horizontal. No diagonal movement is possible. The pattern of screens therefore, resembles a grid or matrix.

The reader views the space in discrete screenfuls of news. As the fringes of the screen are reached, a cut is made and the next screen is displayed. Although this might prove satisfactory in terms of the speed of movement across the space, the sense of movement, and the sense of a larger space may be lost. Although this variation might fail to impress a sense of space onto the user, the conceptual hard structure - of an electronic space through which news is read - would remain.

5.1.10 Thematic nodes

The n-space model promotes an information landscape as the environment for reading news. To counter the confusion and aimlessness - the sensation of being lost in a seemingly boundless space - organisational structures, or to be more specific navigation devices have been employed in the prototype to aid readers sense of place. Chief among these is the thematic node.

Like the use of section names in newspapers and Web news, thematic nodes label a point in the space around which content is thematically or contextually classified and visualised. Each 'thematic section' is represented by a node in the space; a centre around which similarly themed items congregate. From a macro or global view, the user sees a number of items crowding around one point in space; clusters of items around many points and so on.

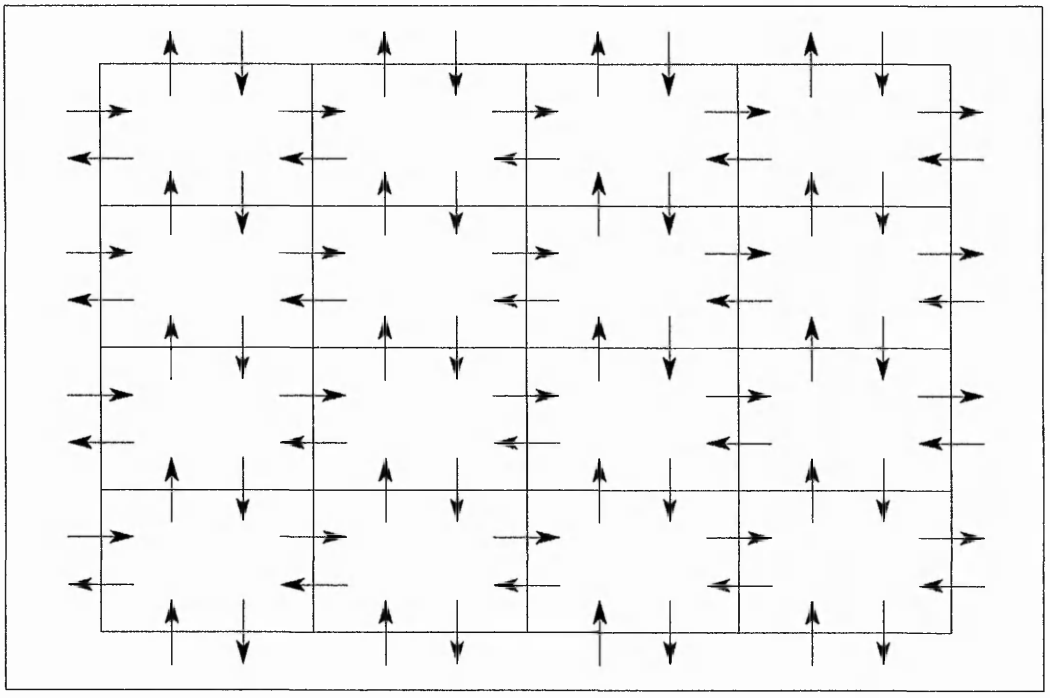

fig. 5.1.23: matrix pattern of screens

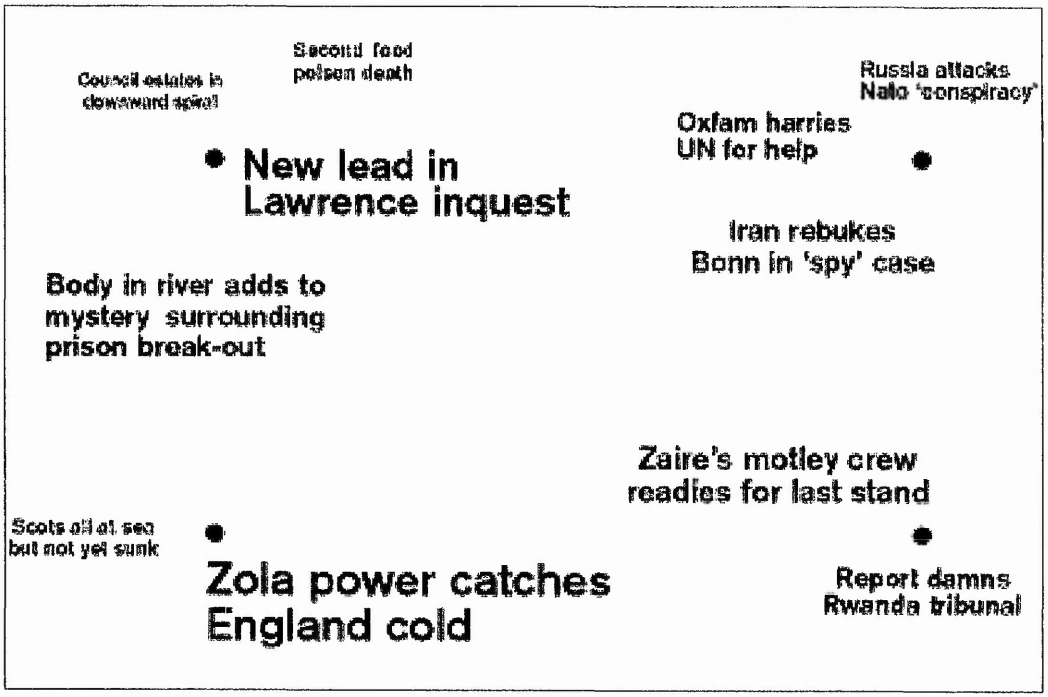

fig. 5.1.24: thematic nodes

As can be seen in fig. 5.1.24, thematic nodes anchor news items in the model's space. The node's theme or title is predetermined by the reader, content is delivered according to specific templates or filters that match reader/user selection. For instance in the example above, the nodes from left to right are: 'UK News', 'International News', 'UK Sport' and 'Central African News'. Each node's label is revealed to the reader by the action of rolling over it (fig. 5.1.25).

The range or scope of the thematic node can stretch from global to local; using this system, the model is able to satisfy one of the promises or claims made for online electronic news: the narrowcast transmission. Readers are provided with content of their choice, although the number of potential nodes in the n-space is established by the reader.

Thematic nodes, therefore serve as a template or map for understanding the space's layout. Again, mirroring section names in newspapers, whose location in the signal is anchored and reinforced by its accompanying page number, thematic nodes are anchored geographically. 'UK News', for instance might be assigned the top left hand corner of the space - upon first entry - since it may be regarded as being most important (following traditional hierarchical forms of layout). Other nodes are positioned at other points in the space, providing the reader with a general layout of it.

Using this system of thematic nodes establishes a system of zones in the space; an organisational system dependent - embedded - in geography. Nodes again rely on a system of spatial relationships between the items around them. Items of similar content assemble or congregate. Depending on distance - nearer to the node, more relevant to the node's theme; farther away, less relevant - specific qualities of information are signalled about news items. Like venn diagrams, news items cross over each other - in terms of content - and it is at these points of intersection that news items cluster; reflecting their shared content by their close proximity in the space.

As has been mentioned, thematic nodes are the key organisational structure in the n-space model: the only fixed element in a space whose role and function - and unique conceptual hard structure - embraces fluidity and impermanence. Such an organisational and navigational aid is necessary, however, if readers are to locate news and anchor themselves in such an unstable environment.

5.1.11 Fragmented news items

Again, terminology from Chapter 4, used to appraise organisational structures in the analyses of news signals can be used to discuss the n-space model. Micro firm structures are those concerned with the arrangement, fragmentation and visualisation of news items (rather than higher level macro firm structures).

Structurally, the fragmentation of an item in the n-space prototype follows the reading path outlined in the analysis of Web news when one item might consist of a number of linked

fig. 5.1. 25: thematic node labelling

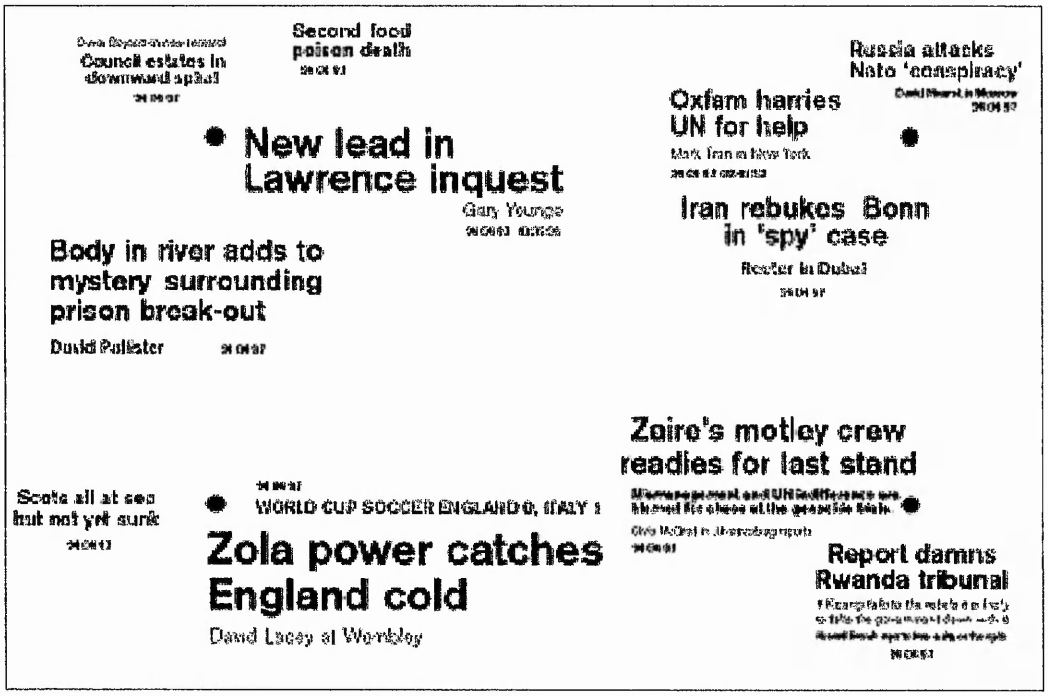

fig. 5.1.26: macro-level view of the n-space

screens, each presenting a combination of soft structures. For example, the first page in a Web news item presents its headline and an image, the second, a collection of headline, sub-head, links and indices, and the third headline, sub-head, body copy, links and images.

In the n-space prototype, each item is separated into discrete elements or layers; the reader follows a path of soft structures to arrive at the item's body copy. As has been seen previously, on entry into the space the reader is presented with a global view of the space, items clustering around thematic nodes.

On this macro-level, only primary soft structures are visualised. These key soft structures are always included: headline, byline and date and time. Others which can be presented alongside these are: sub-head, images or talking heads. In the following series of examples, the fragmentation of news items in the space is outlined. Only textual soft structures are included in these illustrations; the combination of image and text will be discussed later in this text.

In fig. 5.1.26, the reader is presented with a macro-level view of the n-space. Thematic nodes can be clearly seen, around which a number of items are clustered. Headlines are the primary soft structure at this level of fragmentation. As has been outlined, a pattern or network of spatial relationships between items, and between items and thematic nodes is signalled. At this point in the space - in its passive mode - a reader is free to select any of these items, or can browse the space to scan other items and perhaps choose one of those. This, therefore, is the equivalent point of entry or front page to the n-space.

The n-space's frontpage however, is a conceptual point in the reader's path or route rather than a distinct physical location in the signal. Like Web news, this point of entry represents a macro or global level of reading; a position signalled by the reader's limited access to information. At this 'front page' stage, only higher level soft structures - headlines - are visualised.

In this example, the news items shown present the reader with a specific level of information: as mentioned, a definite set of primary soft structures. Certain items have fewer soft structures than others - as this illustration shows - although a fundamental set of headline and date is apparent throughout. This level of fragmentation may be controlled by the reader on the prototype. Personalisation and narrowcasting of news items - as shown in the use of global organisational structures like thematic nodes - is continued in the levels of information being displayed. For instance, selection according to author or byline may be one reader-specified variable. The limits on soft structures being shown can be altered; a reader may decide that every item in the space should be presented as headline, byline, sub-head and one image, or as headline only. This fundamental aspect of the n-space prototype - of absolute flexibility and connectivity - needs to be restated.

In fig. 5.1.27 one item's headline has been selected, this action causing the other points of entry to each news item to be greyed-out and sent toward the back of the space. A map of the space has begun to be created; the reader's decision and reading path is marked in it. Crossing over to this active mode of reading, the thematic nodes are also greyed-out, signalling a micro-level of reading. The item headlined 'New lead in Lawrence inquest' has become the reader's centre of

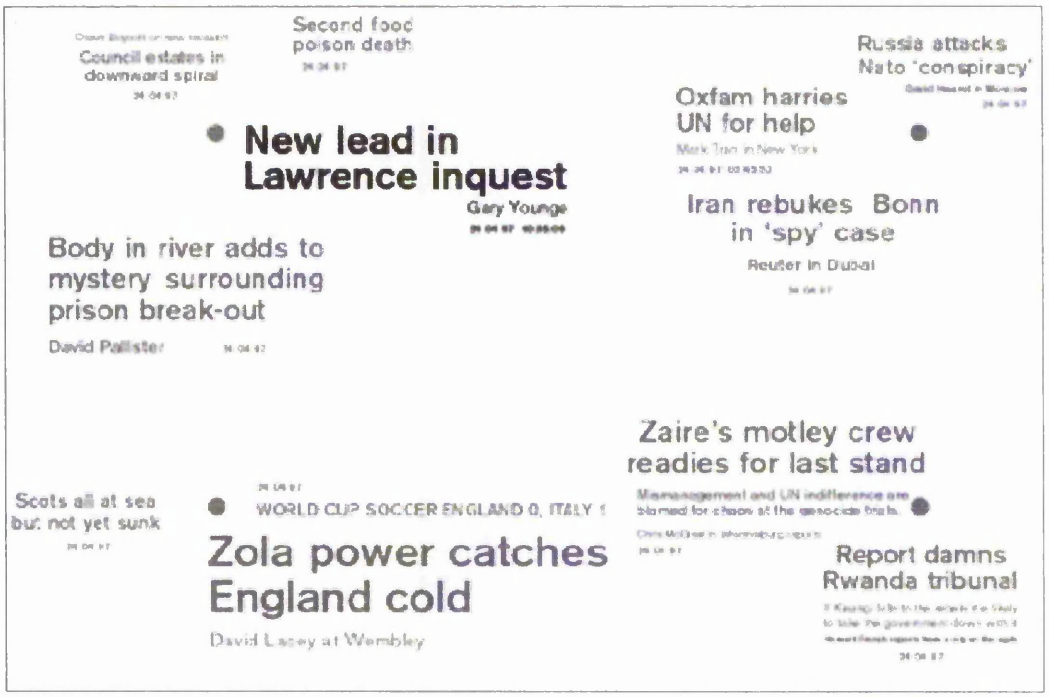

fig. 5.1.27: item selection

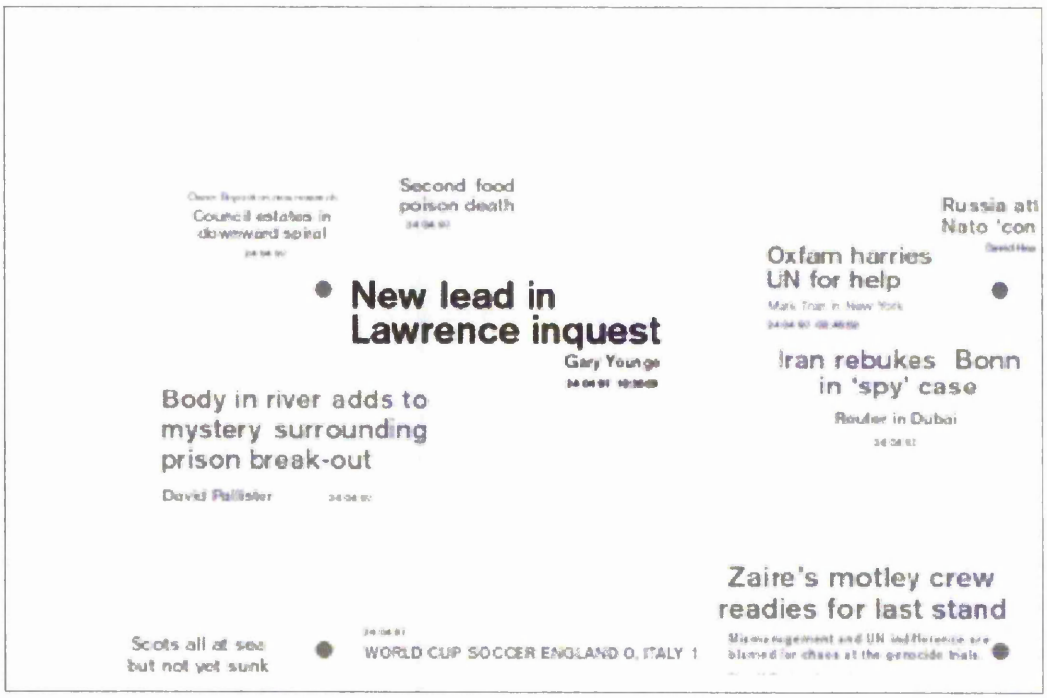

fig. 5.1.28: selection moved to the centre of the space

attention, this focus being visualised by its remaining the only black text.

This headline then is moved to the centre of the space - the centre of the viewable area of the reader's hard structure - restating its central position in the reader's attention. (fig. 5.1.28) It is then surrounded by a number of associated or sub-items, conceptually or thematically linked. Again, these are organised according to the axial rules outlined previously. These new items (or points of entry to other items) form a new layer above the older, unselected ones. At any point of reading in the prototype, the older items can be reselected, and the older layer will be brought back to the front. Consequently, the new layer in this illustration will be sent to the back and greyed-out (fig. 5.1.29).

Again, the clustered items are visualised as a set of soft structures - as a firm structure. At all times in the n-space prototype, news items are fragmented, with the body text of an item - its 'bulk' - being the final destination along its reading path. The process being outlined here takes only a very short time in the prototype, since it aims to mirror the intuitive, flexible and above all rapid speed of reading printed news.

In fig. 5.1.30, again the reader makes a selection from the available start or entry-points (headlines) of the visualised news items. This choice, possibly of a more up-to-date item is signalled by the greying-out of the associated sub-items. This action has a subsequent effect on older layers of news items, shifting them further toward the back of the space and greying them further. These items become visibly lighter in tone, signalling their position in the space's hierarchy as being older items, from an earlier point in the reader's navigation of the space. In this illustration, therefore, a complex map of the reader's actions in the process of reading is beginning to be formed. This pattern, communicated by items being presented in varying tones of grey signals a dimensional, temporal visible network.

Following this selection, the chosen item - now the reader's new centre of attention - moves to the centre of the space (fig. 5.1.31). At this point the reader is presented with the item's text or body copy. Five columns of text - again on the highest level of reading - are produced, presented for reading. This point in the chain of reading can be considered as the 'end of the line' in an item's fragmentation. This process has taken two explicit selections, through six tiers of information, although the text of the first selected item could have been reached after the first selection.

The item presents its body text (fig. 5.1.32). The visualisation of this soft structure - rather than another set of associated, linked sub-items - is achieved through the reader making this specification. This preference in the prototype presents the reader with two paths of fragmentation; either being presented with constantly renewed sets of links around a central item, or a seeming cul-de-sac: the final stage of reading in a news item, its body text.

The body text of the selected, central item is being read. In the prototype electronic n-space, each element of an item is a potential hyperlink: from macro to micro, from a column to a paragraph to a sentence or word, each can be selected and a series of links are presented.

fig. 5.1.29: new linked items

fig.5.1.30: selection of linked item

fig. 5.1.31: reorienting selection

fig. 5.1.32: item body text

fig. 5.1.33: column selection

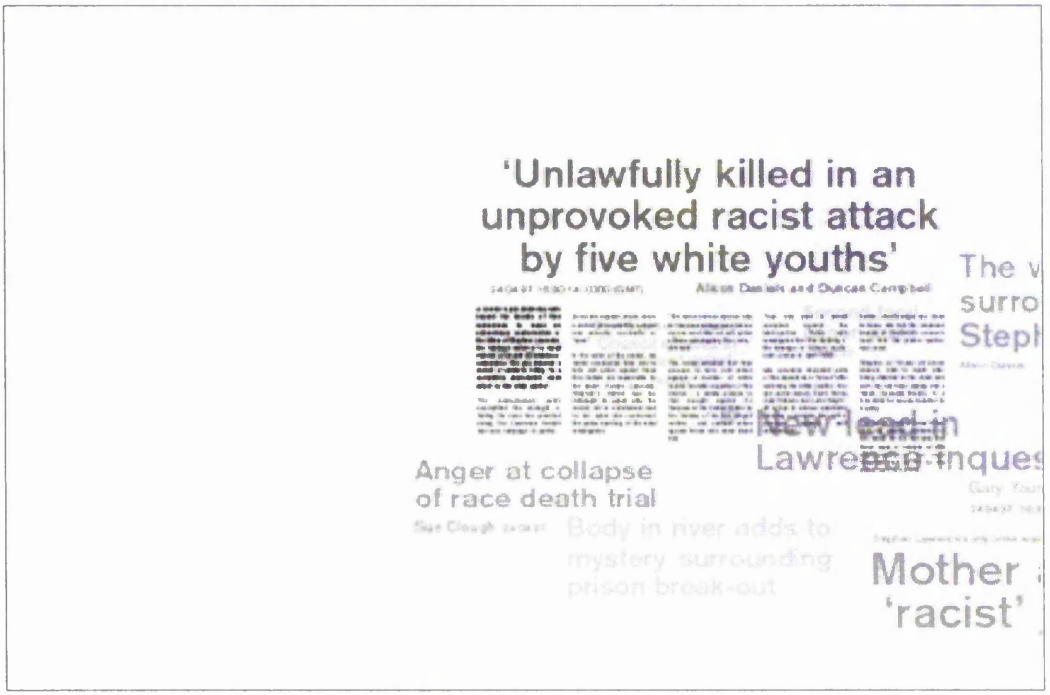

fig. 5.1.34: centred column

fig. 5.1.35: new items in the space

fig. 5.1.36: new headlne selection

In fig 5.1.33, the first paragraph of the first column has been chosen by the reader. Its link potential activated, the text of the selection remains black, as the older, unselected items are greyed-out, and following the pattern of reading outlined previously, are sent to the back of the n-space. Likewise, older layers are greyed further, signalling the sense of time and space between them and the reader's current actions.

Following this movement, the chosen paragraph becomes the new centre of attention in the n-space (fig. 5.1.34), and like older centres becomes the reader's focus on the hard structure. As can be seen, following this reconfiguration of the items in the space, a new set of linked sub-items is called from the space's database and visualised in the space according to rules of layout and visual communication previously discussed (fig. 5.1.35).

This pattern of new, old and older items again grows more complex as layers of news are built up following the reader's navigation and selection. It must therefore be restated that - in terms of communication - news' design must resist overelaborate layout. A function for increasing clarity onscreen should be included in the model, enabling the reader to switch on or off older layers of items, reducing the amount of onscreen clutter. This clutter, however, signals to the reader significant information concerning previous pathways through the space, and should therefore be presented or concealed as is necessary.

Again, the option of item choice is available in the model. In fig. 5.1.36, another headline is selected causing another layer of unpicked news items. This most recent top layer is greyed darkest signalling its temporal juxtaposition. Older layers become lighter as the n-space's z-axis or dimension expands
backward.

The principles discussed in this outline of fragmented news items in the n-space prototype apply throughout the model. This system aims to make explicit the processes revealed in the previous analyses of print and Web news. By fragmenting news items along these lines, an intuitive, flexible micro firm structure is created with each selection.

5.1.12 Summary

To summarise, the n-space model is founded upon notions of geography, space and place. The utilisation and application of certain concepts associated with axial reading - namely chronological, conceptual and temporal hierarchies - aims to develop dynamic, flexible and intuitive systems for using the n-space.

Notions of fragmentation and of macro and micro readings have been discussed with certain aspects of the reading experience in the n-space model outlined, in particular the use of thematic nodes as anchoring devices to aid navigation and user-orientation in what could seem a disorienting environment.

5.2 Static/spatial image/text

5.2.1 Introduction

The spatial arrangement of news items - and their component elements - in the n-space prototype signals definite hierarchies and values to and of the information being communicated. This chapter is concerned with the static organisation and coordination of elements in the space, in particular the effects on hierarchies of reading and communication, and of the juxtaposition of news item's components.

Fragmentation of news items in the n-space model has previously been discussed in terms of macro and micro firm structures. This exploration of the finite systems for layout and the spatial arrangement of soft structures on the hard structure of the screen aims to recognise and identify new or changing relationships, roles or functions. This chapter is concerned only with the static presentation of news items and elements, the categorisation and examination of dynamic firm structures - those concerned specifically with movement - will be undertaken later in this text.

5.2.2 Fragmented news items

It has been outlined previously in this text that, across each news space, news items are necessarily fragmented. These fragments - or soft structures - are reassembled into meaningful arrangements, what I term firm structures. This fragmentation can be analysed on two distinct levels: presentational and hierarchical. In terms of presentation, news items are split into predetermined, discrete visual and verbal components. These elements are visualised in their respective news space according to distinct textual hierarchies; components signalling definite codified, quantitative and qualitative levels of information and value to a reader. These levels are mirrored or made explicit in their presentation as spoken or seen soft or firm structures.

A conceptual reading path is therefore constructed and signalled through the arrangement of pre-programmed elements into a recognisable news item. A reader moves along this path, levels of interaction determined by each news space's conceptual hard structure. Each element in the construction of a news item is notionally a bridge to the next; a point on the reading path from which the reader can divert or remain. A printed headline for instance allows the reader the capacity to follow that item's reading path - moving on to sub-headline, image or body text - or to shift gaze to another news item. These 'hurdles' either seduce a potential reader into the text, or repel outward, toward other items and hurdles.

5.2.3 Values and hierarchies

As has been discussed, spatial arrangement - of elements on a surface - in the n-space prototype signals distinct qualities or levels of information. Priorities, attached or attributed to specific visual or verbal elements signal levels of importance, or levels of suggested reading. These hierarchies; of importance and of presentation, are closely linked. In the n-space prototype, three axes (or dimensions) are used to signify three qualities to the information presented along or on them. Similarly, notions of levels, or hierarchies are given form through codified presentational elements or soft structures. In news, names are given to these labels - headline, sub-head, kicker and body copy to name four - through which levels of reading and of information, and their function are widely acknowledged and understood.

Informational hierarchies - hierarchies of reading - are signalled through specific, ordered juxtapositions. These firm structures are themselves authored texts, signalling definite hierarchies through presentational cues. By exploring the relationship between a news items importance and its form - or presentation - the relationship between hierarchies of information and strategies or paths of reading - made explicit through their visualisation - can be examined and appraised. Investigating and establishing hierarchies of presentation in the prototype electronic n-space relies upon an analysis of the communicative potential for information hierarchies.

The n-space model recognises and acknowledges the traditional educated permanence, the social relationship between reader and writer or producer and consumer of news. This broad-based communal knowledge and implicit understanding relies upon the system of cliches employed in each news space, based upon the visual or verbal communication of information and the establishment of informational hierarchies. However, the nature of its new, electronic context - its conceptual hard structure - pushes this understanding aside. Impermanence, fluidity and flux - a virtuality in the strictest sense - create the conditions for a renewal or rewiring of the writer/reader relationship. Conceptual qualities traditionally associated with established forms of news dissemination - stability, permanence and fixity - can be altered in the prototype n-space. More specifically they can be cut loose and reversed; their newer qualities being of impermanence and fluidity. Levels of information and hierarchies associated with these soft and firm structures undergo a redefinition and reorientation in their new environment.

5.2.4 Reorganising information

In the prototype n-space, associated elements - soft structures - can be positioned at any point around each other forming meaningful constellations or firm structures. In this scenario, the model's inherent fluidity potentially reformats those hierarchies of information previously outlined. Figs. 5.2.1 - 5.2.4 depict four potential visualisations or firm structures of one news item. In this example, the item is presented as consisting of two elements or soft structures only: headline and body text. These figures show the most straightforward permutations or arrangements of these elements.

I STAND BY MY STORY

IN THE putrid heat of a 'summer's day in August 1992, a crew from Independent Television News, reporters Penny Marshall, Ian Williams and myself, stumbled upon two places that would stain our century.

In the first, Camp Omarska, we saw a line of Muslim prisoners, some emaciated, emerge from a hangar, blinking into the sunlight. They were drilled across a yard under the eye of a guard atop a machine-gun post, into a canteen where they gulped bowls of watery soup like famished dogs. Their eyes burned to tell a truth that was too dangerous to utter in the presence of the guards. 'I do not want to lie,' said one, 'but I cannot tell the truth.'

Bundled out of Omarska, we headed for Trnopolje to be met by an unforgettable sight: a group of men gathered behind a barbed wire fence, some of them skeletal, talking of mass murder in yet more camps. As it turned out, what we saw that day was a benign tip of the iceberg. The full story was infinitely worse. The reality emerged through the testimony of former inmates and the investigations of lawyers from the Hague war crimes tribunal: a gulag of concentration camps, of which we had seen but two. Omarska was a dark inferno of mutilation, starvation, torture and murder. Trnopolje was another hellish place, with prisoners in transit to and from the main concentration camps - many beaten, raped and murdered as they waited while others had been herded there from their homes, or else were in flight from systematic killing in their villages, to await 'ethnic cleansing'. We were and are careful to point out that this was not the Third Reich revisited, but the echoes of another time were loud. Now comes a grotesque assault, upon our work, upon the judicial reckoning with its legacy and upon the memory of the prisoners who perished and their grieving kin. From the apparently insignificant quarter of an obscure magazine, Living Marxism, comes a theorem that our coverage initiated some conspiracy of exaggeration and deceit, which in turn brought the wrath of the international community down upon the Serbs.

Living Marxism has published a translated article by a German journalist called Thomas Deichmann, at the core of which is a famous and moving shot taken by ITN's cameraman of that skeletal prisoner behind barbed wire. I was interviewing Fikret Alic while he was filmed. He had arrived from another camp, Kereterm, where he had witnessed the massacre of 200 prisoners in a single night - a crime confirmed by subsequent investigations.

Deichmann's contention is that ITN 'cooked' the picture, eager to show Alic behind the fence to give the impression that he was a captive. Deichmann sets

fig. 5.2.1: headline above body

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fig. 5.2.2: headline below body

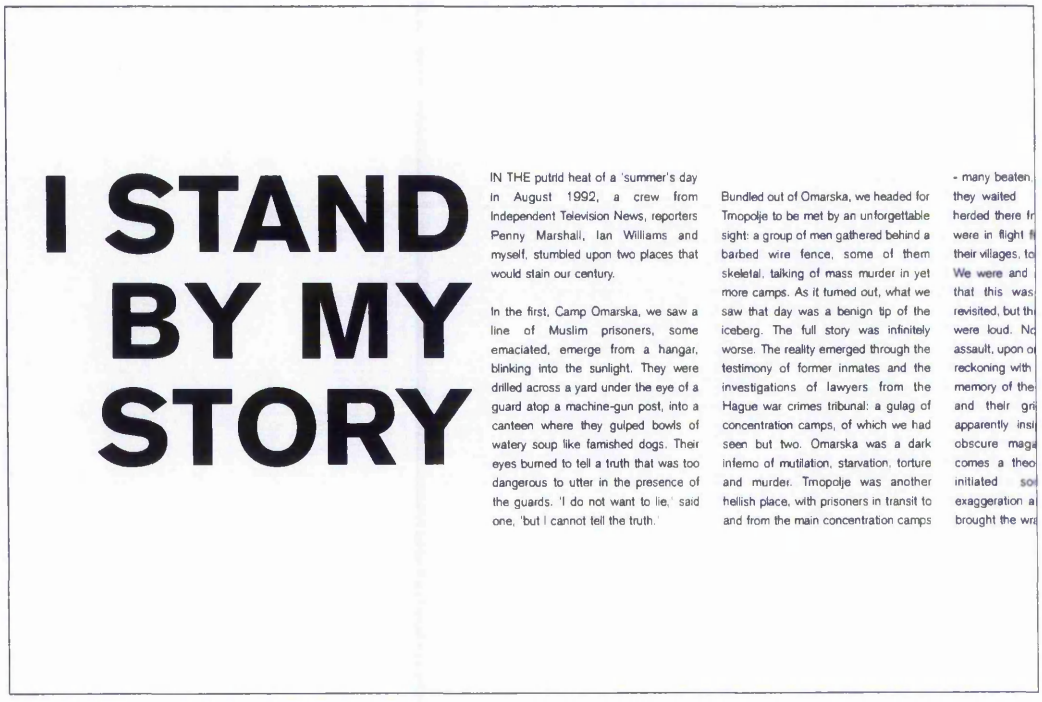

fig. 5.2.3: headline to the left of body

fig. 5.2.4: headline to the right of body

As these examples show, the simplest repositioning of elements - remaking the item - can alter its visual hierarchies. In the prototype n-space, each of these configurations may be used to visualise an item. However, a number of points of interest arise: positioning the headline beneath the item's text shifts this key, high-level soft structure along the vertical axis. Reanchoring the most visually distinct element, the item's organisation seems skewed, since it contradicts our traditional modes of reading; those anchored to the conceptual hard structures of page and screen. Likewise, shifting the headline horizontally - to the left and right of the text - reorients the item's focus. Its organisation again seems unsatisfactory, opposing our usual experience of reading.

However, the sense of omnidirectional space engendered by the prototype's conceptual hard structure - its liminal, transitory and transformational underlying system - isn't fixed to one directional reading path. A facility for the dynamic layout or presentation of information is possible in the n-space model. This system allows items - and their component firm and soft structures - to be placed at any point on the screen: to be read upwards or towards the left. As new items or elements are presented in the course of reading. A firm structure can be constructed - as an item is being read - in a form whose direction of reading seems to contradict that which we are accustomed to through our education via the printed page (fig. 5.2.5).

Further, left-to-right directional layout can be inverted. In the n-space model, columnar presentation, for instance, could be presented across a reflected reading path. This right to left system may probably turn out to be unworkable, since it explicitly contradicts that defined by the Roman alphabet (fig. 5.2.6).

The in-built flexibility of the n-space prototype - its capability for producing dynamic layout as seen above - does not therefore rule out the possibility that a news item's body text will be presented in a right-to-left pattern. A means of signalling this reversed reading path should be outlined. By indicating the item's start-point - the first sentence or paragraph in its body text, for instance - the direction for reading should be clear. In print, this is often signalled typographically: by presenting the first word of the first sentence in caps, or by emboldening its first letter, a point of entry into the text is made manifest.

The n-space model makes its system for denoting a text's entry point more explicit. The first word of the first sentence is - following print's example - in capitals, the rest of the first line is bold (fig. 5.2.7). Subsequent columns of text in its body are staggered, by one line, again implicitly emphasising the item's start-point.

In fig. 5.2.8 both reading paths are signalled by the central element's typographical and spatial stress. These techniques for signalling an item's reading path or hierarchy may seem too subtle and not explicit enough for a reader whose knowledge of the prototype is less thorough than the author's. This criticism is well made - although the n-space model emphasises its capacity for intuition and flexibility - and should be addressed. One solution can be to emphasise the reading path explicitly. In fig. 5.2.9, an arrow is used to signal to the reader the direction in which the elements are being presented.

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fig. 5.2.5 firm structure constructed in a form whose direction of reading seems to contradict that which we are accustomed to through our education via the printed page

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fig. 5.2.6: inverted left-to-right directional layout

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fig. 5.2.7: explicit textual entry point

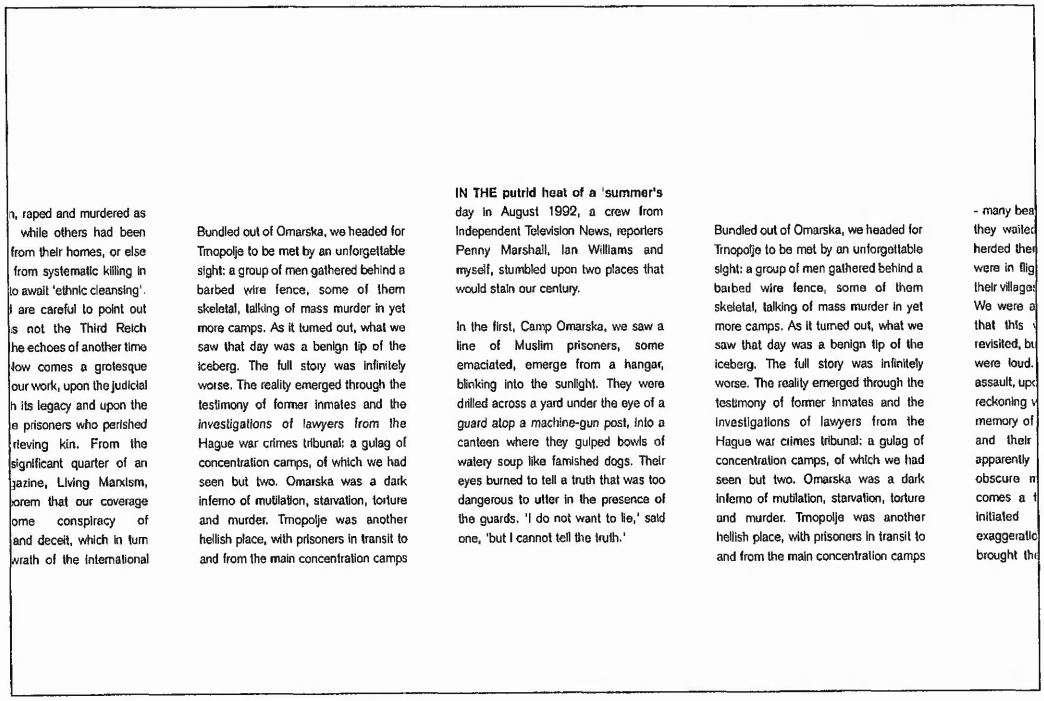
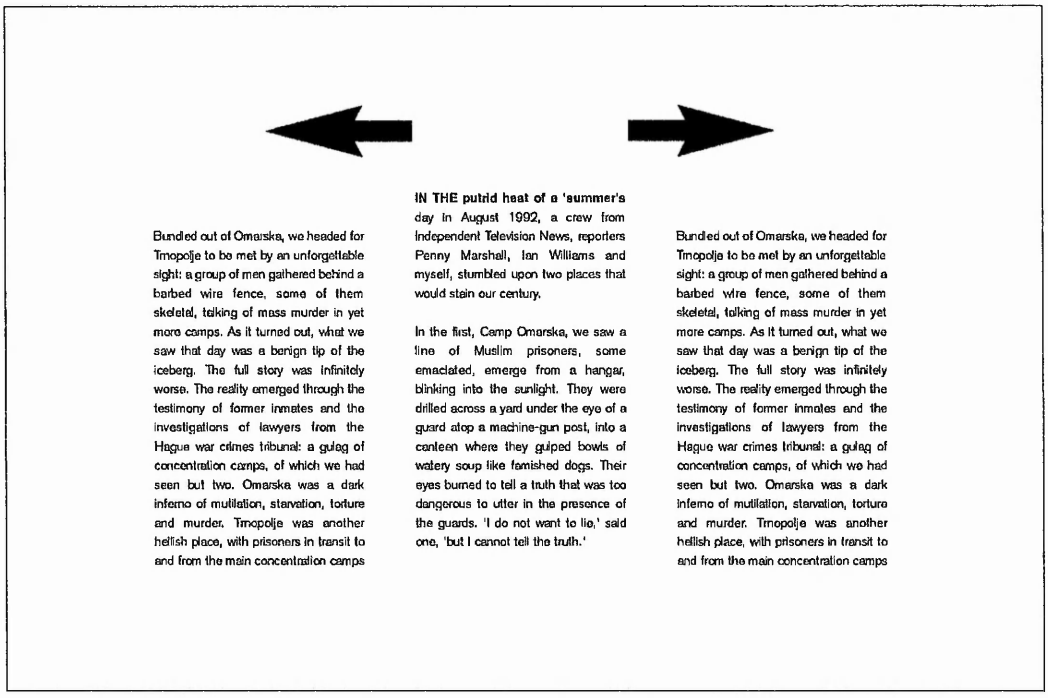


fig. 5.2.8: reading paths signalled by the central element's typographical and spatial stress



Bundled out of Omarska, we headed for Tmopolje to be met by an unforgettable sight: a group of men gathered behind a barbed wire fence, some of them skeletal, talking of mass murder in yet more camps. As it turned out, what we saw that day was a benign tip of the iceberg. The full story was infinitely worse. The reality emerged through the testimony of former inmates and the investigations of lawyers from the Hague war crimes tribunal: a gulag of concentration camps, of which we had seen but two. Omarska was a dark inferno of mutilation, starvation, torture and murder. Tmopolje was another hellish place, with prisoners in transit to and from the main concentration camps

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fig. 5.2.9: an arrow used to signal to the reader the direction in which the elements are being presented

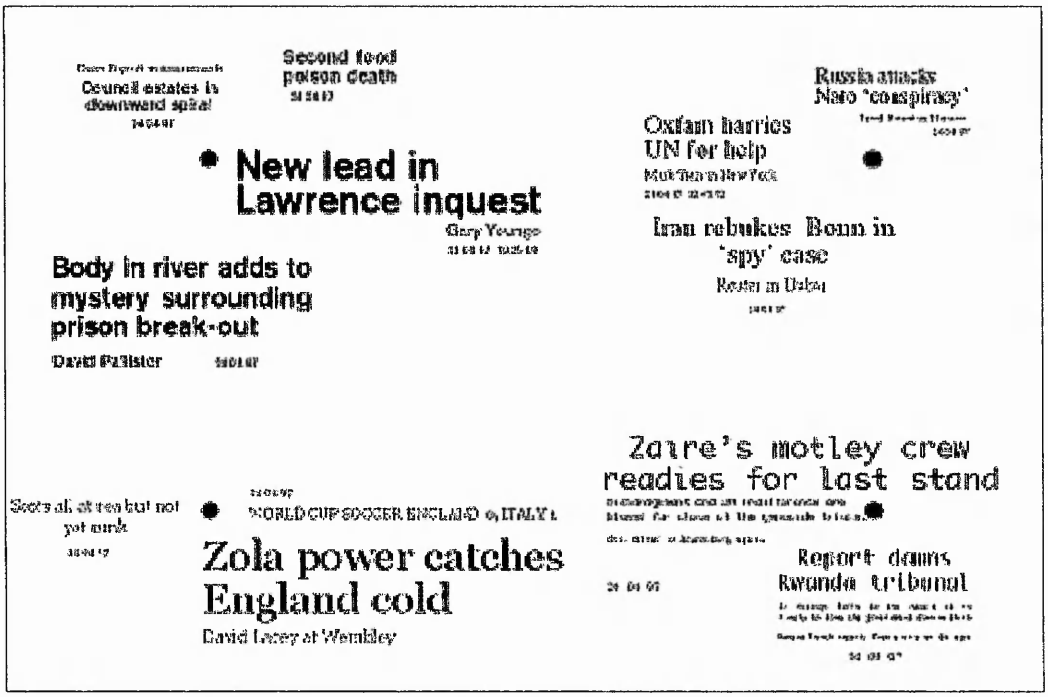

fig. 5.2.10: linked news items and shared typefaces

Hierarchies of reading, therefore, can be remade in the n-space prototype. The flexible nature of its conceptual hard structure and its capacity for dynamic layout allow traditional reading paths to be subverted. This freedom enabled by the model must be tempered by the reader's capacity to understand the new conceptual structures being introduced. More traditional systems of visual communication and organisation would present a more familiar writing (and reading) space while ignoring the potential for these remade, flexible or shifting organisational structures. A balance must be maintained, therefore, between more conventional, cliched visual communication and a newer, technologically inspired or unrestricted one. The n-space model aims to support this balance, and with the inclusion of visual aids - as seen above - introduce new structural systems as intuitively as possible.

5.2.5 Thematic typography

In the last chapter, I discussed the use of nodes positioned on the prototype's conceptual hard structure to denote a thematic centre for individual news items. This means of establishing a content-based hierarchy can be supported by the use of specific systems or structures of visual communication to distinguish each type or subject of news item in the potentially confusing layout of the n-space model. Whilst I'm not attempting to outline a inclusive framework for each potential content-type, the following discussion examines the concept of thematic typography when applied to a small number of selected content-types.

The n-space model uses three main systems for denoting thematic connection or linkage. These are: font, alignment and colour.

5.2.5.1 Font

Using this structural system, linked news items - those sharing the same subject - are visualised in the same typeface. For instance, in fig. 5.2.10 four nodes are shown. Items clustered around these nodes are visually distinguishable since each node's items share the same font. In this example, the node located at top left - UK news - is presented in Akzidenz Grotesk Bold, the top right - World news - in Times, bottom left - Sports news - in Georgia, and bottom right - Central African news - in Monaco. These typefaces signal some visual difference between items, enabling clearer communication and understanding in the - perhaps initially, and often - confusing n-space. The use of themed fonts goes some way to address the need for a visual solution to organisational and hierarchical problems; although as can be seen in the example the use of two superficially similar fonts - Times and New Century Schoolbook - may lead to a further level of confusion. The use of typeface to signal content-type in the n-space prototype should be tempered by the acknowledgement that what promises to clarify communication may sometimes fail.

This structural system is included in this outline of the n-space model, however, since it attempts to aid the reader's understanding and navigation of the prototype's conceptual hard structure. Typefaces should be configured to theme or subject with the minimum of overlapping of visual

identity. Serif or san-serif typefaces are used in this aspect of the prototype although it is acknowledged that a similarity in some faces us unavoidable.

5.2.5.2 Alignment

Alongside the use of thematic fonts in the n-space, an item's alignment can signal its status or content-type. As a broad-based system for visually communicating hierarchical or thematic information, an item's alignment can be visualised in four states: left-aligned, right-aligned, centred or justified. In fig. 5.2.11, this system is illustrated. Again, themed typefaces are used to distinguish content-types. Alongside this, each conceptual or thematic cluster of stories is aligned in one of four manners. Top left is left-aligned, top right justified, bottom left right-aligned and bottom right centred. As with the use of fonts to denote a classification or subject, an item's alignment can signal specific qualities to information being visualised. Using this system, the n-space model is able to use one of four alignments - on top of its themed typeface - to signal an item's specific subject or theme. On a global or macro level - the prototype in its passive mode - the reader will be able to navigate large amounts of information, and be aware of the informational 'value' to the thematic nodes on display.

5.2.5.3 Colour

Likewise, the use of colour can signal a thematic node's specific content-type. Each thematic node in the space is assigned a colour and this coded system for differentiation between items denotes hierarchies of subject and theme via the prototype's use of thematic nodes.

Fig. 5.2.12 combines colour with the use of each previously outlined system for typographically signalling content. In the n-space prototype, each structural system is used - independently or together - to communicate to the reader hierarchies of content.

5.2.6 Headlines and hierarchies

Across all news spaces, the headline communicates a summary of each item. As high-level visual or verbal soft structures, headlines are positioned at the top of each news signal. Their hierarchical value is pinned down, both conceptually - as important signifier and summariser of forthcoming content - and visually or verbally - being positioned at the top of the page, of first in the signal; at a larger type-size, or spoken with greater seriousness.

This example of the headline signals the fixed hierarchical nature of certain soft structures. The system of dynamic layout in the n-space prototype goes some way to unpick this fixity. Any firm structure may be presented in a number of configurations, the headline therefore can be moved around within this firm structure. Figs. 5.2.13 - 5.2.18 illustrate the shifting nature of seemingly immutable soft structures in the model. An item - composed of three soft structures - headline, sub-head and body text - is reconfigured six times. Each element is shown shifting along the vertical axis. In these illustrations, the key graphical signifier of a headline's hierarchical importance - its position in the arrangement of a firm structure - is remade. The rules of dynamic

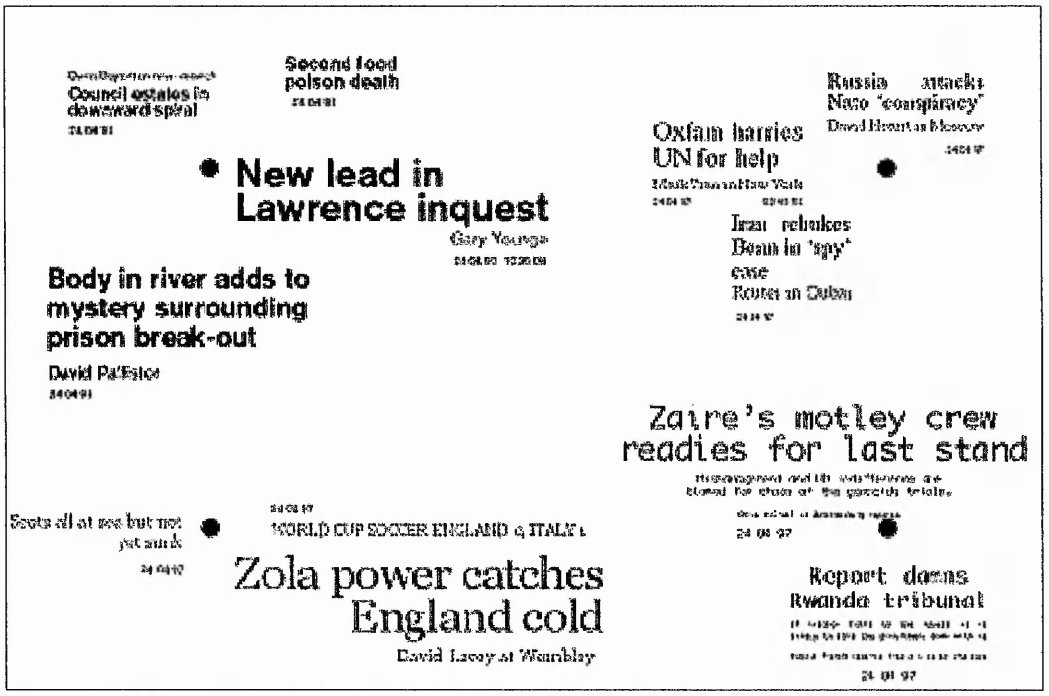

fig. 5.2.11: alignment signalling status or content-type

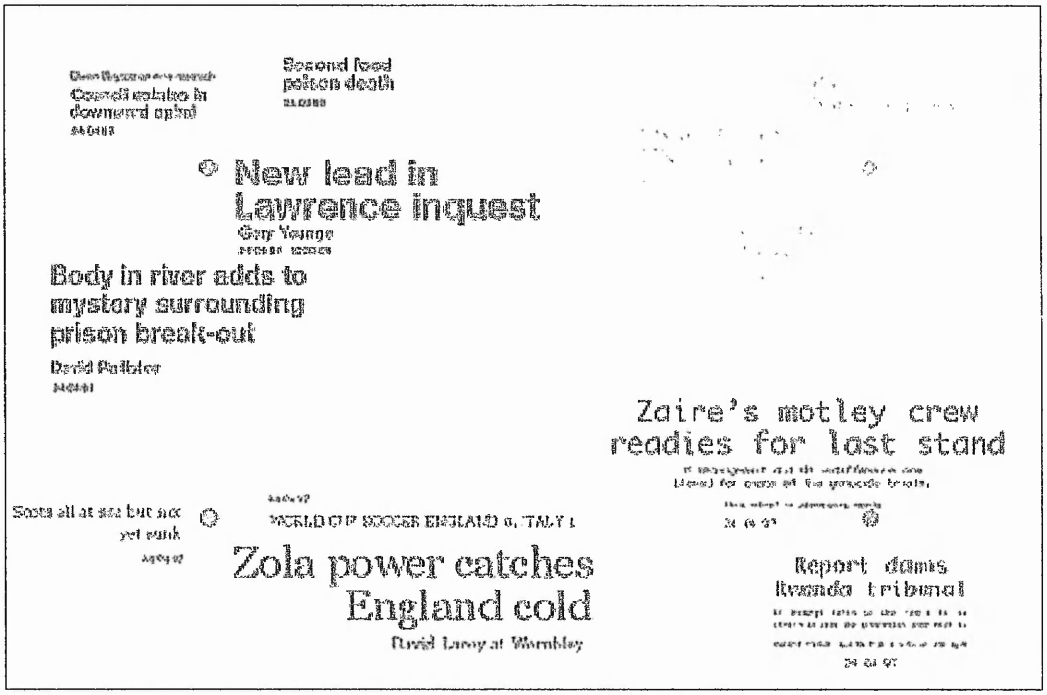

fig. 5.2.12: colour signalling content-type

fig. 5.2.13: reconfiguring soft structures: headline; sub-head; body (top to bottom)

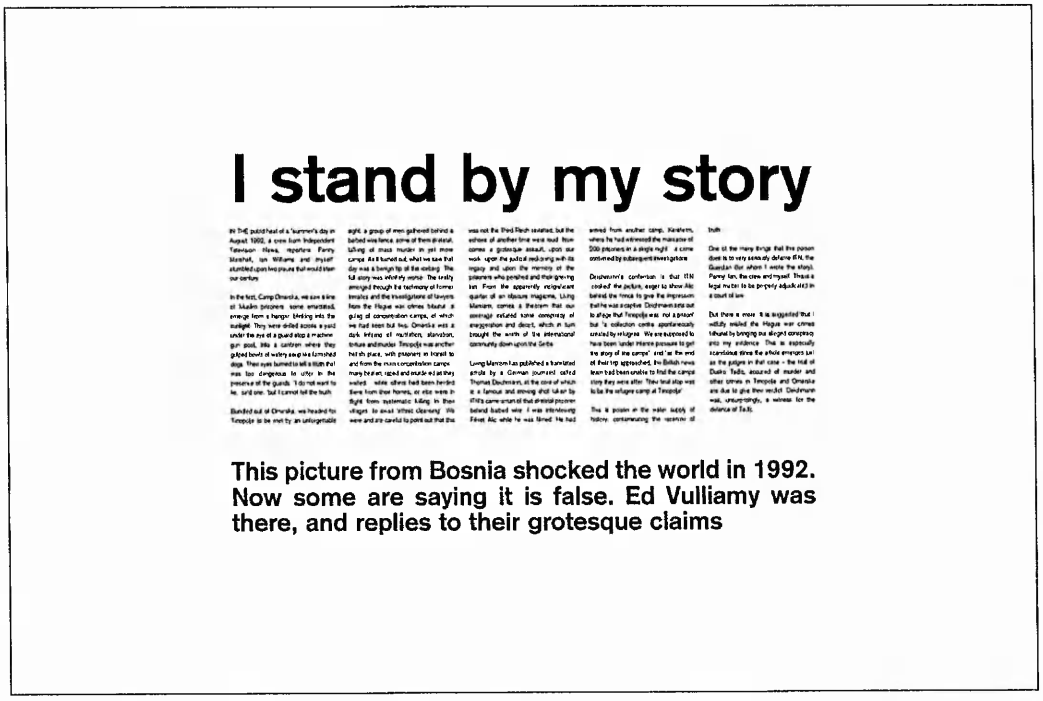

fig. 5.2.14: reconfiguring soft structures: headline; body; sub-head (top to bottom)

fig. 5.2.15: reconfiguring soft structures: sub-head; headline; body (top to bottom)

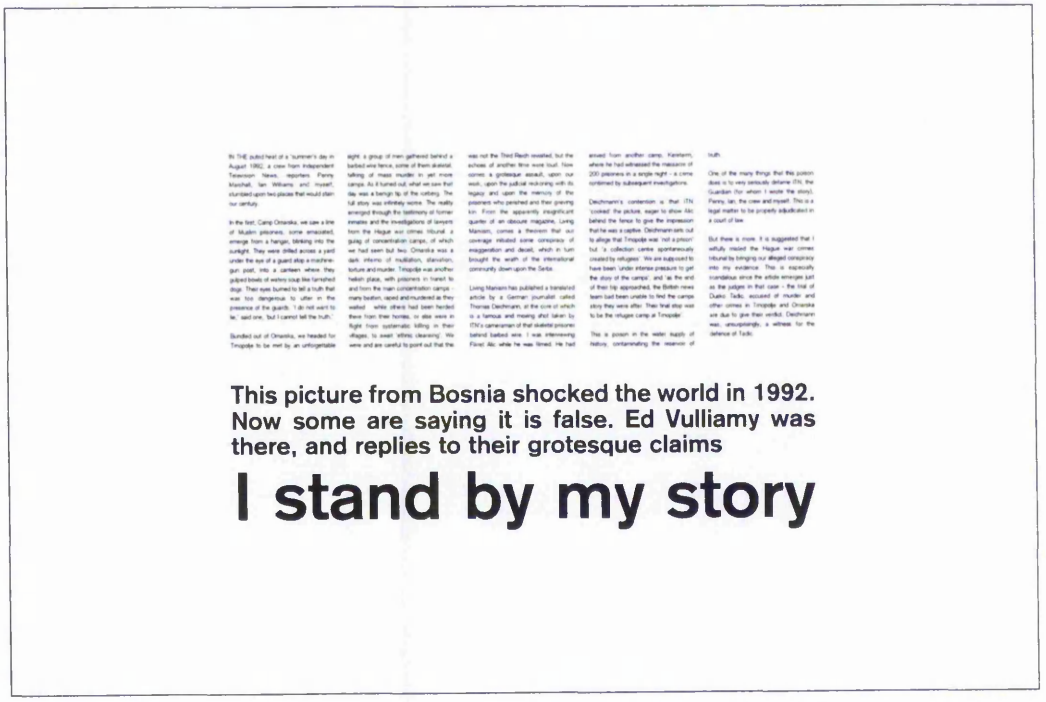

fig. 5.2.16: reconfiguring soft structures: body; sub-head; headline (top to bottom)

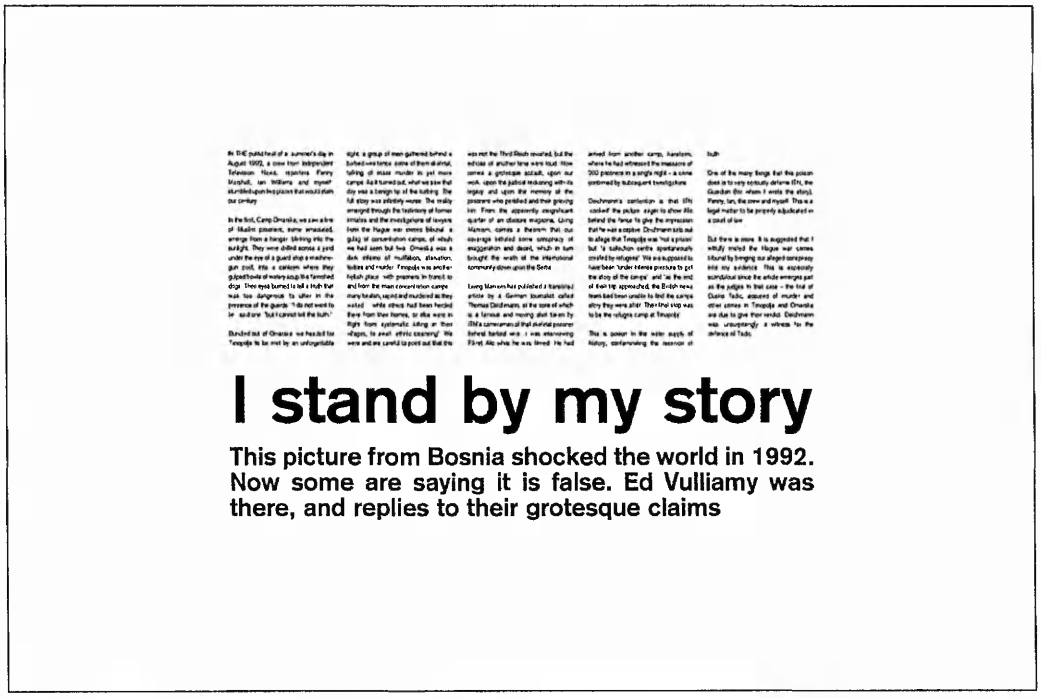

fig. 5.2.17: reconfiguring soft structures: body; headline; sub-head (top to bottom)

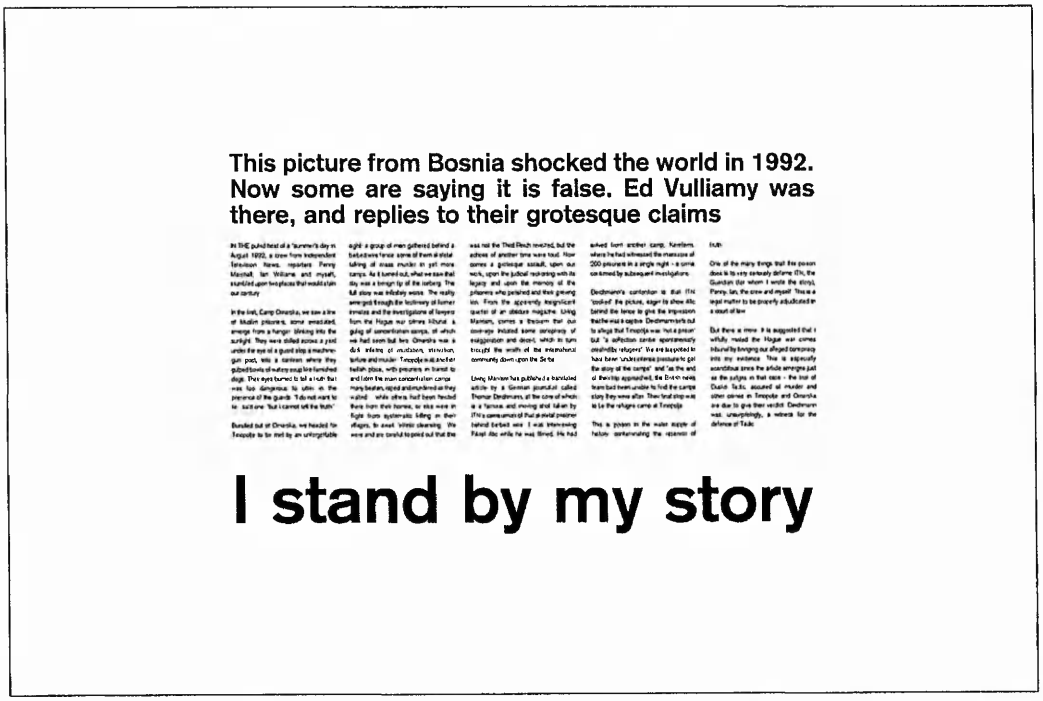

fig. 5.2.18: reconfiguring soft structures: sub-head; body; headline (top to bottom)

layout don't assure former key soft structures - from older news spaces - of their previous graphical significance. In the case of the headline, its other main means of signalling its hierarchical importance - its size - remains.

5.2.6.1 The moving headline

The remaking of the headline's spatial-hierarchical presence - opened up by the potential for dynamic layout in the n-space prototype - can continue. As a communicative structure, the headline's capacity can be expanded to include the notion of the moving headline: a loop of significant imagery endlessly repeating its visual text, presenting and representing a continuous - sometimes silent - shifting, dynamic headline.

Figs. 5.2.19 - 5.2.22 present an example of the moving headline. This item's body copy is placed alongside, above or underneath the image and a new firm structure - a new combination or relationship of or between text and image - emerges. In the first example, the usual or typical graphical hierarchical signalling system is reversed through the n-space prototype's use of dynamic layout: low level body copy is placed above its associated headline.

The convergent nature of the n-space model realigns each soft structure's communicative power and potential. This new firm structure's meaning-potential, however, is both open and closed, seemingly apparent yet hidden. Superficially, when compared to a printed headline, this new soft structure's communicative potential seems limited; it's meaning less easy to reach since it has to be viewed in real-time. Also, in the process of reading the image, a number of possible meanings may emerge. The communicative power of a moving headline to a certain extent relies upon the visual power of the images being shown. Unless the meaning is absolutely clear - forceful, even - in terms of supplying a clear-cut meaning to its content, it may remain arbitrary.

This soft structure, therefore relies upon its associated or adjacent elements in order to pin its meaning down. The content of the moving headline is reinforced or supported by the juxtaposition of soft structures like the sub-headline or caption. Like the still image in printed news or any image on television, an image in the n-space prototype is always supplied with other linked, contextualising elements.

5.2.6.2 The relationship between text and image

Having untied the graphical hierarchy concerned with the headline, the relationship between text and image in the n-space prototype can be explored. Traditional structures or rules of layout, the reading path and hierarchical structures of staggered soft structures: of text and image can be seen in fig. 5.2.20. Here, text and image follow the guidelines as laid down by their position in space, with the combined image/text moving headline acknowledged as the point of entry to this news item. Juxtaposition of elements - and the subsequent reinforcement of meanings - continues; the gap between form and content is closed.

Fig. 5.2.21 presents the moving headline at the body's left-hand side. This firm structure again follows a path of reading tied closely to notions of reading carried from the page. Hierarchically,

fig. 5.2.19 moving headline: text; image (top to bottom)

fig 5.2.20: moving headline: image; text (top to bottom)

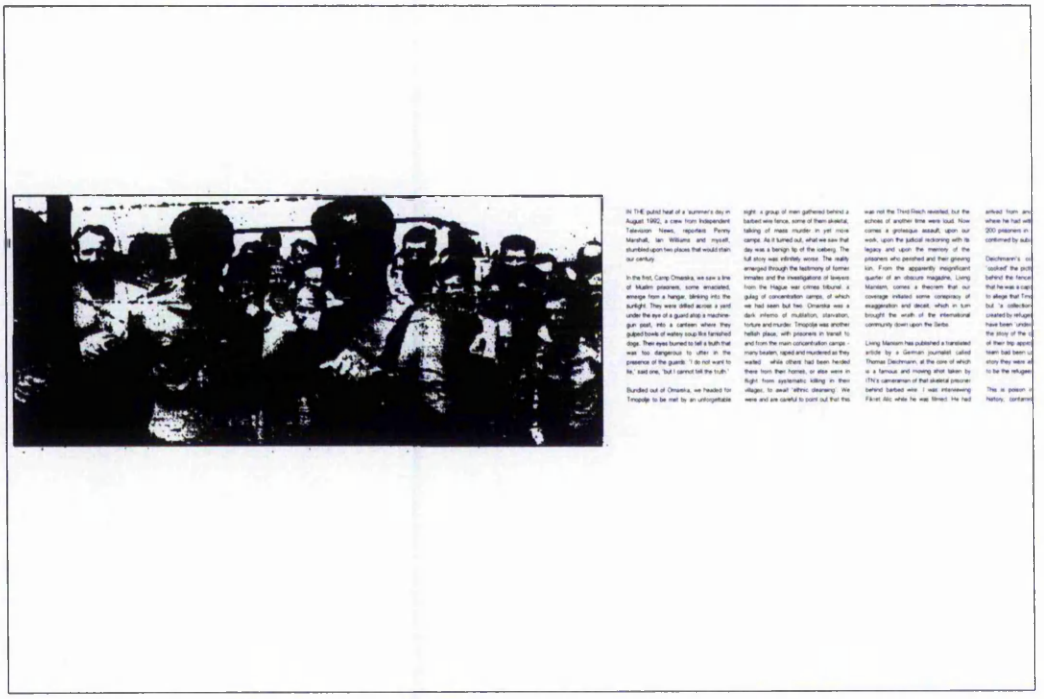

fig. 5.2.21: moving headline: image; text (left to right)

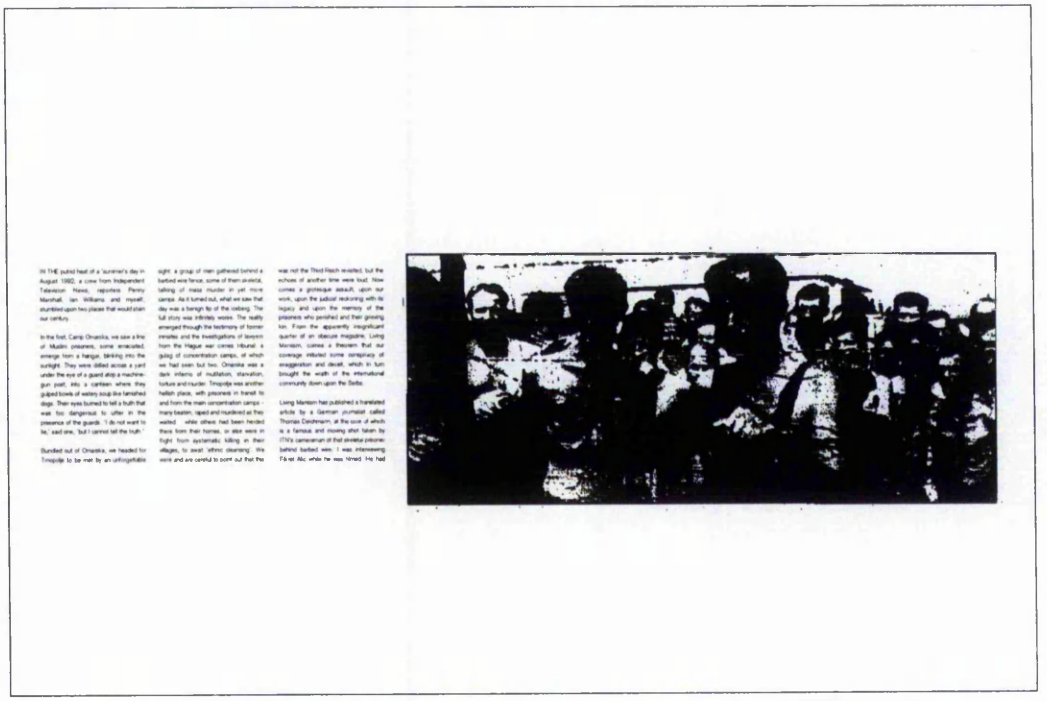

fig. 5.2.22: moving headline: text; image (left to right)

both soft structures seem to occupy the same level - the same physical level on the hard structure's horizontal plane. Fig. 5.2.22 shows these elements in reverse; the moving headline to the body's right. In this figure the headline seems to have moved toward a supporting function, more inclined to being a supplementary element.

These examples of four outlines for reading in the n-space prototype signal the fluidity and dynamism of the model. The moving headline is itself an example of the potential for shifting and remaking soft structures. As has been outlined, traditional notions of informational hierarchies are effected when transported into the n-space. These cliched, internalised systems and paths of reading are recreated and updated. Figs. 5.2.20 and 5.2.22 are as open for use in the prototype as the more conventional 5.2.19 and 5.2.21. If these remade hierarchies are used, then their function is signalled clearly (as fig. 5.2.9 illustrates). Likewise, the moving headline occupies the position as a headline through its location on the hard structure in relation to other elements. It doesn't look like a headline, but the reader is informed that it is through its point in the space.

5.2.7 Size

As has been mentioned - and is implicit in this text - hierarchies of information are signalled through hierarchies of presentation. An element's size on the hard structure denotes - with little effort from producer or consumer - a soft structure's importance in relation to its surrounding elements. In the n-space prototype, size remains the key means for communicating specific informational hierarchies.

In simple terms, the n-space model follows generally held rules concerning the notions of size and importance. A firm structure comprising a number of large soft structures assumes on a macro level, greater importance in comparison with smaller items whose component soft structures or elements cover a smaller area on the surface of the hard structure. Smaller elements are often supplementary to a larger soft structure. In fig. 5.2.23, for instance, its firm structure is comprised of a large headline and sub-head, alongside an image and a significantly smaller information graphic. This element is secondary within a seemingly important item; further hierarchies are therefore embedded into an item.

5.2.8 Flexible elements

A smaller, supplemental element can - in the n-space prototype - shift along hierarchical paths. The examples below illustrate how one soft structure can - within a news item - climb these informational and graphical hierarchies. The models integral notions of flexibility and fluidity allow movement between elements and movement of elements: a formal, dimensional plasticity, triggered as situations change or are changed. Fig. 5.2.24 presents an item consisting of: headline, body text, and embedded image. Clearly the image in this example supplements the items text; a position signalled by its size and its location on the prototype's hard structure.

I STAND BY MY STORY

This picture from Bosnia shocked the world in 1992. Now some are saying it is false. Ed Vulliamy was there, and replies to their grotesque claims

fig. 5.2.23: a firm structure comprised of a large headline and sub-head, alongside an image and a significantly smaller information graphic

I STAND BY MY STORY

IN THE putrid heat of a 'summer's day in August 1992, a crew from Independent Television News, reporters Penny Marshall, Ian Williams and myself, stumbled upon two places that would stain our century.

In the first, Camp Omarska, we saw a line of Muslim prisoners, some emaciated, emerge from a hangar, blinking into the sunlight. They were drilled across a yard under the eye of a guard atop a machine-gun post, into a canteen where they gulped bowls of watery soup like famished dogs. Their eyes burned to tell a truth that was too dangerous to utter in the presence of the guards. 'I do not want to lie,' said one, 'but I cannot tell the truth.'

Bundled out of Omarska, we headed for Trnopolje to be met by an unforgettable sight: a group of men gathered behind a barbed wire fence, some of them skeletal, talking of mass murder in yet more camps. As it turned out, what we saw that day was a benign tip of the iceberg. The full story was infinitely worse. The reality emerged through the testimony of former inmates and the investigations of lawyers from the Hague war crimes tribunal: a gulag of concentration camps, of which we had seen but two. Omarska was a dark inferno of mutilation, starvation, torture and murder. Trnopolje was another hellish place, with prisoners in transit to and from the main concentration camps - many beaten, raped and murdered as they waited while others had been herded there from their homes, or else were in flight from systematic killing in their villages, to await 'ethnic cleansing'. We were and are careful to point out that this was not the Third Reich

revisited, but the echoes of another time were loud. Now comes a grotesque assault, upon our work, upon the judicial reckoning with its legacy and upon the memory of the prisoners who perished and their grieving kin. From the apparently insignificant quarter of an obscure magazine, Living Marxism, comes a theorem that our coverage initiated some conspiracy of exaggeration and deceit, which in turn brought the wrath of the international community down upon the Serbs.

Living Marxism has published a translated article by a German journalist called Thomas Deichmann, at the core of which is a famous and moving shot taken by ITN's cameraman of that skeletal prisoner behind barbed wire. I was interviewing Fikret Alic while he was filmed. He had arrived from another camp, Kereterm, where he had witnessed the massacre of 200 prisoners in a single night - a crime confirmed by subsequent investigations.

fig. 5.2.24: item consisting of: headline, body text, and embedded image

I STAND BY MY STORY

fig. 5.2.25: on selection the image's dimensions change

'There is poison in the water supply of history, contaminating the resevoir of truth'

I STAND BY MY STORY

IN THE putrid heat of a 'summer's day in August 1992, a crew from Independent Television News, reporters Penny Marshall, Ian Williams and myself, stumbled upon two places that would stain our century.

In the first, Camp Omarska, we saw a line of Muslim prisoners, some emaciated, emerge from a hangar, blinking into the sunlight. They were drilled across a yard under the eye of a guard atop a machine-gun post, into a canteen where they gulped bowls of watery soup like famished dogs. Their eyes burned to tell a truth that was too dangerous to utter in the presence of the guards. 'I do not want to lie,' said one, 'but I cannot tell the truth.'

This picture from Bosnia shocked the world in 1992. Now some are saying it is false. Ed Vulliamy was there, and replies to their grotesque claims

fig. 5.2.26: item consisting of headline, sub-head, image and quote

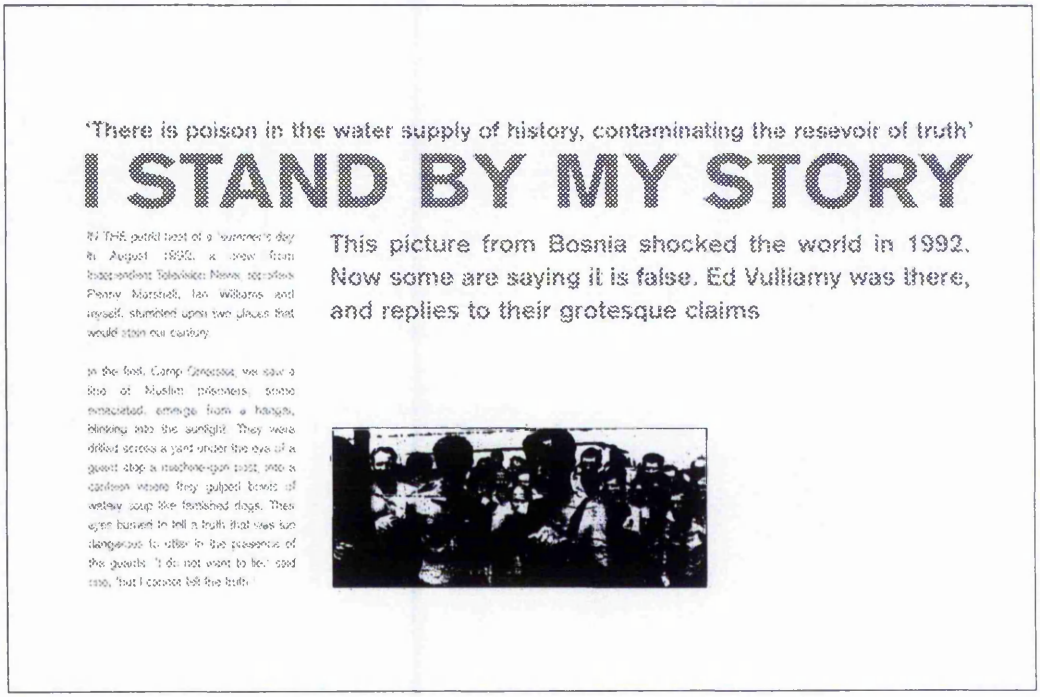

fig. 5.2.27: the image is selected. Unselected elements of the item are greyed-out and sent to the back

fig. 5.2.28: increasing the size of a bridging image

On selection (fig. 5.2.25) the image's dimensions change. It expands to supersede the text, replacing it - temporarily if wished - in the space. This element takes over the body text's role as the primary means of explanation and communication. The headline remains in its place, contextualising the arbitrary - perhaps discretionary - meaning of the image.

Elements can be followed through separate items, becoming bridges in hypertext exit events. This node between linked items and connected stories in the model can result in alterations to the element's size since its hierarchical position may differ in respect to different news items.

Fig. 5.2.26 presents an item consisting of headline, sub-head, image and quote.The n-space prototype's active mode allows any component or soft structure of this firm structure to be open for selection. The image once selected - unselected elements of the item are greyed-out and sent to the back, as discussed earlier in this text (fig.5.2.27) moves to the centre of the hard structure and calls up a linked item. This new items headline and subhead appear beneath the linked image, creating a new firm structure.

Fig. 5.2.28 illustrates the increase in size of the bridging image. As it is reconfigured for its new item firm structure its increase in size reflects its position in the new preformatted hierarchical structure. Again, the notions of fluidity and of dynamism - of elements - in the n-space model are explored. New relationships between text and image become apparent, since in this instance the image develops or rewrites its hierarchical identity between items; it moves for a supplementary role in one firm structure to a primary one in another.

5.2.9 Summary

To summarise, the n-space prototype signals static and spatial hierarchies of information and presentation in a flexible, dynamic and multi-layered writing space, using cliched systems of reading from other news signals and newly developed or remade structures. It is acknowledged that the sense of freedom engendered by the model's spatial metaphor needs to be tempered by the use of certain presentational rules regarding an effectively communicated reading path. Dynamic layout, therefore, presents information in a form which although recalling the firm structures of the printed page, exploits the flexibility and instability of the models conceptual hard structure. It is the conceptual hard structure which defines the n-space's ability to actively manipulate and reorder and remake certain soft and firm structures. The moving headline, for instance, is reconfigured in the prototype as a previously unseen soft structure; one whose emergence could not have occurred in a previous news space. The introduction of movement to this analysis - explored in the next chapter - presents another variable for consideration in this already fluid, unstable space.

5.3. Dynamic news

5.3.1 Introduction

This chapter is concerned with the dynamic organisation and coordination of elements in the n-space environment and - as discussed in the last chapter - the effects upon reading hierarchies and their associated communicative codes. Specifically, this chapter is concerned with the introduction of movement to the n-space model, and the development of associated signalling systems. The concept of dynamic 'news flow' is discussed and strategies for interpreting certain aspects of it or even breaking the flow are introduced.

5.3.2 Visualising data flow

In his book 'News Revolution' (1997), Mark D. Alleyne outlines a model which illustrates (fig. 5.3.23) a structure of global news flow. This flow, Alleyne argues, has changed very little in the period of time during which systems of news distribution have developed from international wire services to multimedia information networks (Alleyne 1997, p. 12). His model gives form to discrete information flow; geographically, information - as news - is presented as a network of connections, between rich industrialised states in the northern hemisphere, with some linkage to poorer southern hemisphere states. Developments in forms of dissemination have seemed to allow a greater sense of freedom for information to be disseminated, whereas the underlying - deep - structures or hierarchies of control remain in place."The new technologies have increased the quantity and quality of information flows but they have not subverted the basic hierarchical structure of those flows." (Alleyne 1997, p.12)

What Alleyne's model is illustrating - besides the political ramifications of how news is, and has been, globally distributed - is the notion that news is dynamic: a thing of movement. As a distinct form of language, and of (re)packaged information, news is and always has flowed. Across physical geography and electronic topographies - in either bits or atoms - circulation is one of news' necessary actions. Presentation of information in the prototype electronic newsspace allows for the exploration of notions of data flow, and its on-screen visualisation.

5.3.3 Visualising electronic news flow

At this point, it is worth including - and discussing - one aspect of the prototype in some detail. The newsspace model operates in two distinct modes - passive and active - both with individual visual hierarchies and modes of representation, as well as systems for communicating news - and news flow - dynamically.

5.3.3.1 Passive mode: news flow in real time

The prototype's passive mode can best be described as being close to watching CNN or a multimedia news service like the Bloomberg network with the sound turned down; news is something which happens, is reported and presented to the viewer as an automatic and autonomous process. The word 'passivity' implies an objectivity or lack of involvement on the user's part in this process. While the newsspace is left alone - with no user interruption or action - the newsspace best resembles the unidirectional flow of television or radio news.

Notions of passivity and one-way information-flow are ammunition for those who criticise the traditional, broadcast model of news dissemination. The growth of electronic information networks like the Web are freeing consumers of news from this redundant system. However, the availability of interaction and active modes of news-consumption aren't guarantees that they will be used. News has become something listened to or watched, passivity is encouraged. Breaking this relationship - between viewers of news and broadcast news - may not be entirely achievable or in fact desired.

Upon entry to the newsspace model ('switching' it on, or opening it, to use the language of older, established forms of news broadcast) the user is presented with a preconfigured pattern of thematic nodes in the 'empty' space (as discussed in chapter 5.1). This constellation of ordered points in the n-space relates to the user's selection of content-type. The information presented to the user at this point is up-to-the-minute and highly personalised. It is also worth including that the model is capable of providing degrees of zoom or focus or scales in which to display the contents of the space to the user; from close-up to wide-angle (figs. 5.3.1 - 5.3.6).

As time passes - with no user action or interference - the model is configured to make sure that it is constantly updated; the flow of news through channels of journalism and production, from event to item reporting that event, ensure that the newsspace prototype is rarely still. The dynamic n-space, therefore, if left in its 'passive' mode would seem to shimmer, as new news items enter the space and older events are removed to be archived for later recall upon user direction.

The flow of news items through the 'news-process' are visualised in the model; news agendas are set and re-set as time passes and as events reach the end of their life-span (news items are referred to as 'having legs', that is their staying power in terms of holding the public's attention and whether the event itself can support the interest being shown in it). This flow, therefore, could be recorded and monitored by simply viewing the n-space; seeing the news as it is offered to the public - which in this case may be a public of one - and replaced by 'newer' news. A comparison could be made to the flow of information via ticker-tape into offices of news agencies, or the real-time news entering agencies via the computer screen or to the computer-user's desktop over the worldwide web via systems like PointCast. Such systems on the web are enabled for real time, personalised dissemination although they lack the n-space model's dynamic capabilities for visualisation: a constant alteration and re-alteration of visible/viewable hierarchies of visual communication.

fig. 5.3.1: the n-space upon entry

figs. 5.3.2 - 5.3.6: within the passive mode, the user can zoom into the n-space

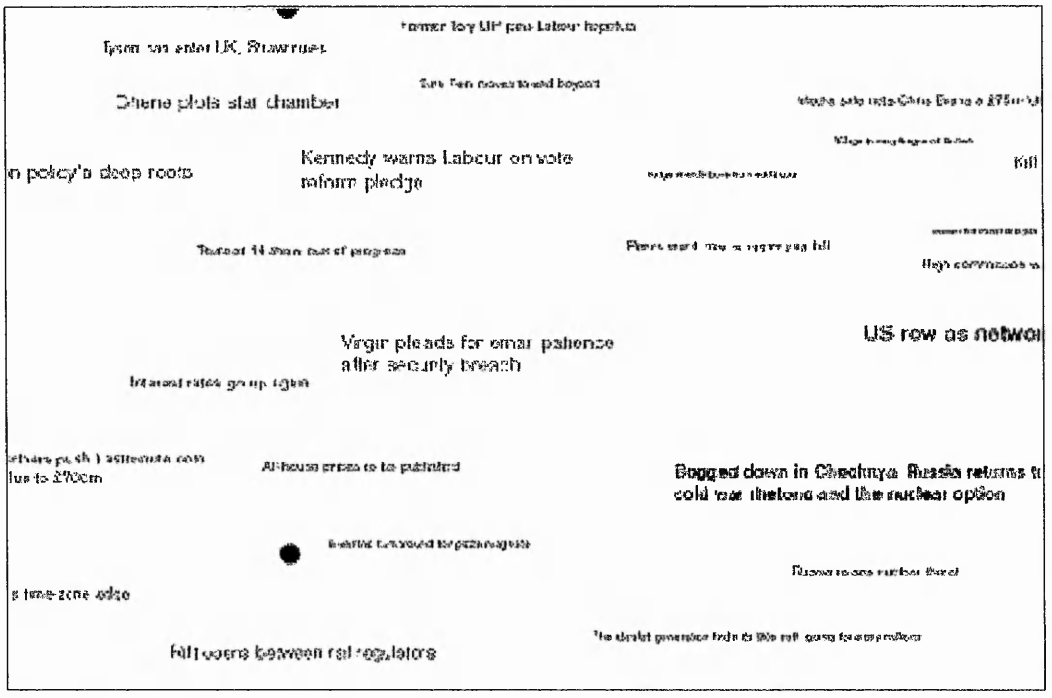

fig. 5.3.3

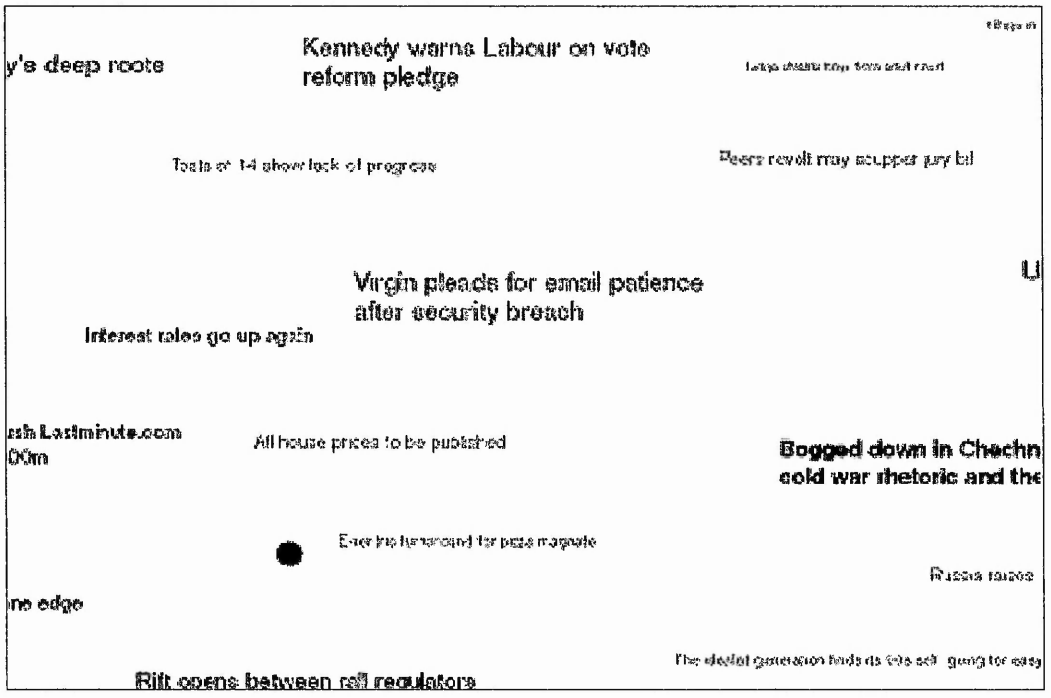

fig. 5.3.4

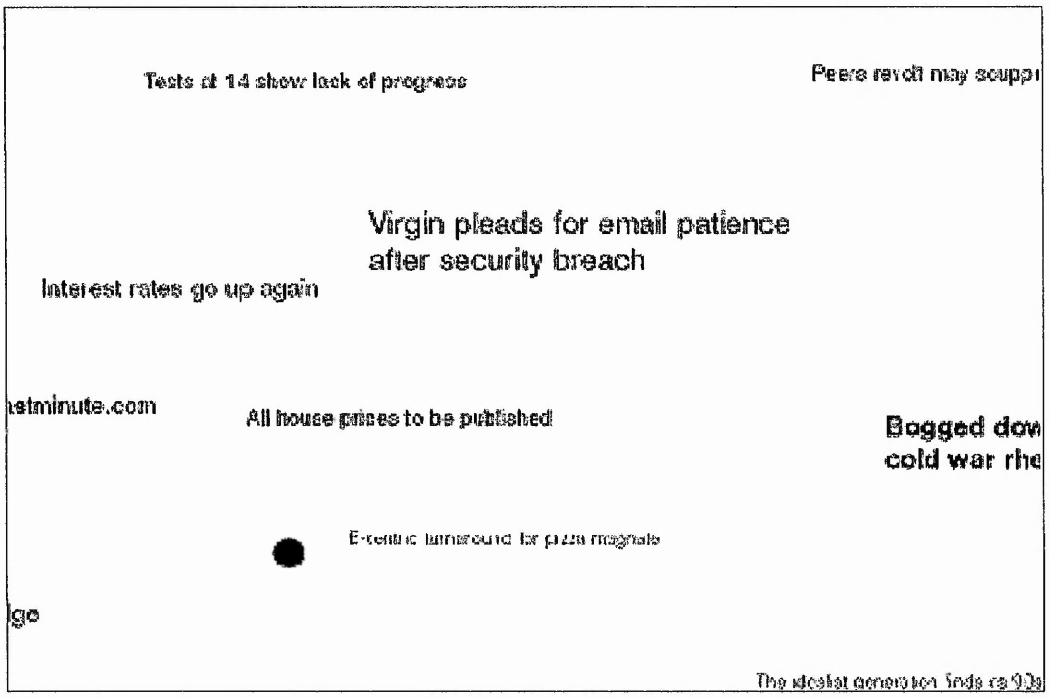

fig. 5.3.5

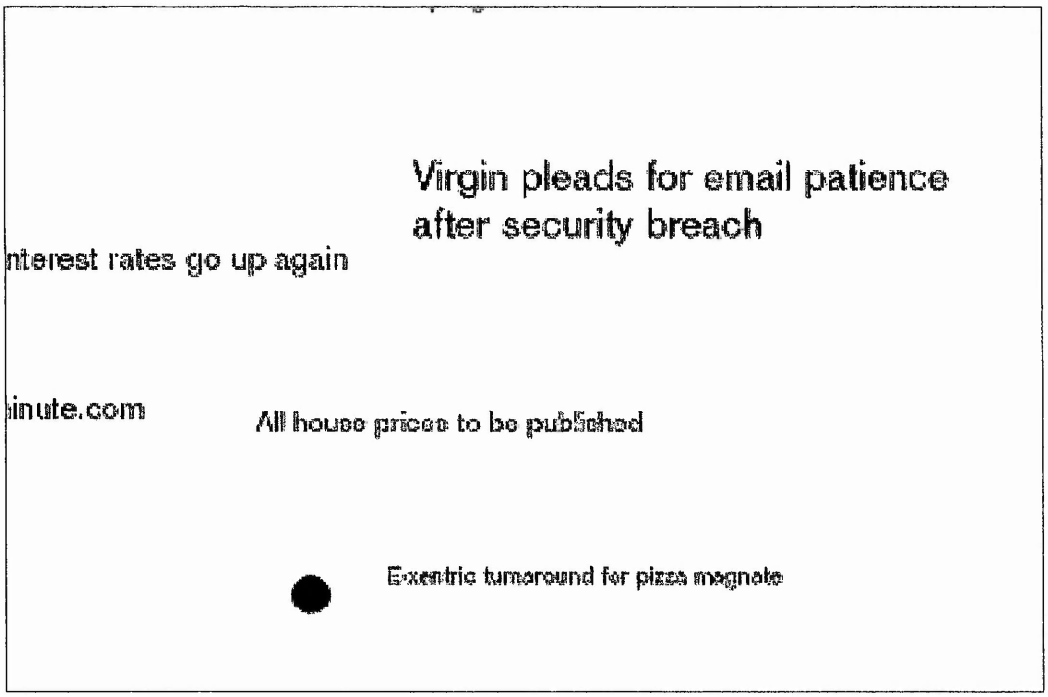

fig. 5.3.6

As Alleyne's model illustrates, it is possible to give form to the flow of news information in a simplified and simplistic political-geographical map. The n-space prototype - in its passive mode - presents a similar map; one which visualises a dynamic topography, a space which mirrors the fluidity of the news process. This form has as its primary 'axis' time, a straight line upon which reports of events are charted. This topography, when left to 'play', illustrates - using the rules of spatial presentation outlined in the previous chapter - the constant repositioning of items in the space around their respective thematic nodes. Like Alleyne's geographical model, notions of space and time - and of the dynamic nature of news flow - are the bedrock of the n-space prototype.

5.3.3.2 Active mode: breaking the news flow

As opposed to the n-space's passive mode, its active (or perhaps, to be more specific its interactive) mode encourages user interference and involvement. In another sense, the model responds with a different form of dynamism; the movement of information as selected by the user. As discussed in chapter 5.1, user choice - the selection of a news item, for instance - prompts a form of response from the model. In this case, the item is moved to the centre of the viewable area (the screen) (figs. 5.3.7 - 5.3.8).

This example illustrates a point outlined again in chapter 5.1; that the prototype's conceptual hard structure - its 'boundless or continuous expanse in which all objects exist and move' - acknowledges the inherent dynamism of news/information. As the model's passive mode makes clear, the process of news - its production and dissemination - has a flow and sense of movement of its own, one which can be viewed in an objective sense. The n-space's active mode, however, introduces and expands notions and modes of interaction previously found in the communication of printed news.

The dynamic of the moving eye across the surface of the page or screen is mirrored in the actions undertaken by the prototype after the user makes an entry into the space; selection or interaction prompts some kind of response. As outlined previously, choosing one item for viewing isolates that item from the general noise of other items in the space. In this sense, the flow of news in the space has been broken since the user's focus is now upon one item specifically rather than the many supplied by a simultaneous communication of news items. This switch from browsing to the isolation of single news items is signalled visually by the movement of that item, becoming the metaphorical 'centre of attention'.

This breaking of the news flow replaces one form of dynamism with another. The objective movement of items - and the user's passive viewing - is altered to become a subjective dynamic; a new - personalised - news flow is created by the user's actions of selection and the model's subsequent response (figs. 5.3.8 - 5.3.10).

fig. 5.3.7: the n-space model in passive mode; the user browsing the news items presented

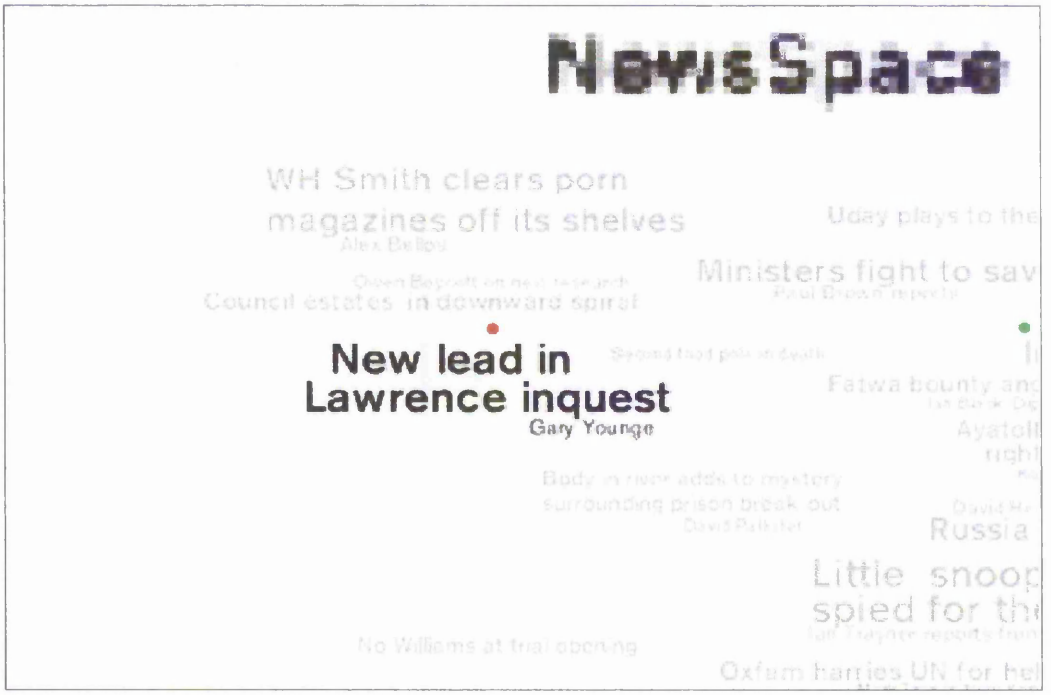

fig. 5.3.8: a news item has been selected, with the other items moving backwards in the space

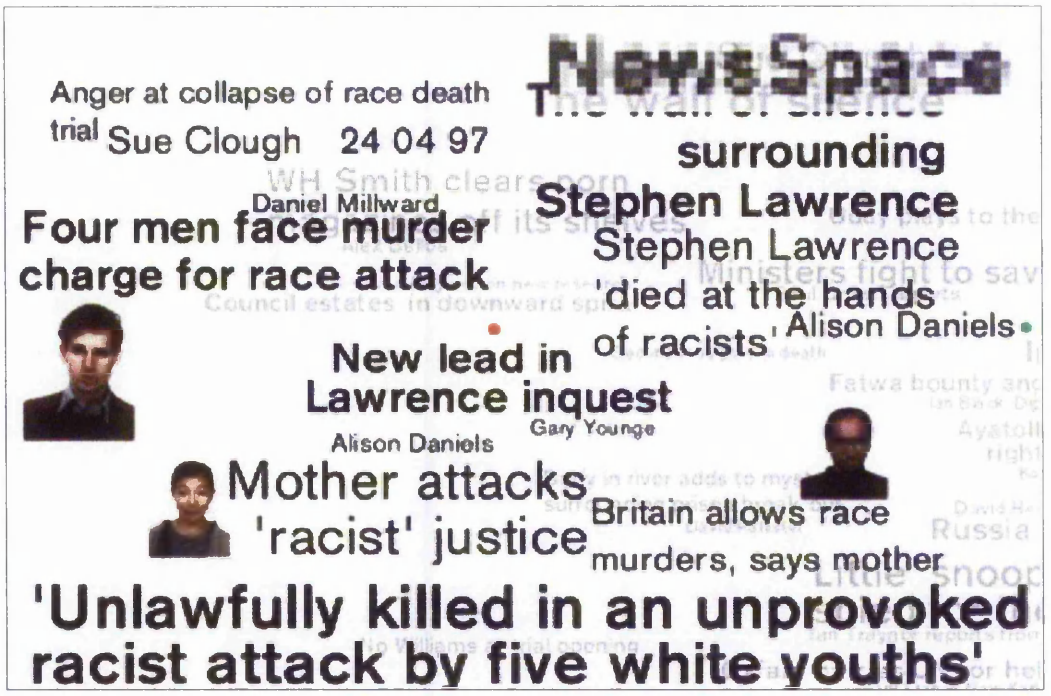

fig. 5.3.9: once selected, related items move around the central item

fig. 5.3.10: a related news item is selected, it too then moves to the centre of the space

5.3.4 Dynamic news items

As the previous point makes clear, individual news items themselves are made dynamic upon entry into the n-space. This can be considered in two senses: their movement and their construction.

5.3.4.1 Movement

In the active mode of using the n-space model, as we have seen, the user generates a dynamic as he/she moves across its conceptual hard structure. Alongside this macro movement - of the space itself, a switch between 'types' of news, between thematic nodes at points in the space, or between varying degrees of perspective and zoom - there are numerous micro movements, comprising the actions of the news items themselves.

5.3.4.2 Movement between linked items

Although for the most part static, news items in the prototype are to some degree self-aware. That is, they are encoded with information about both their content, and context. Therefore, as the user actively makes connections or selections, items respond to this interaction. For instance, one item - with links to a number of other items - can appear in numerous contexts, alongside numerous - seemingly unconnected - news items. There are both content- and context-based similarities in a number of seemingly unconnected items; the n-space model aims to present these similarities to the user. (fig. 5.3.11)

This conceptual movement or relationship between items is communicated by the movement of the item itself. Upon selection, an item moves to the centre of the conceptual hard structure. As related items appear around this new centre - fading up or dissolving into view - other linked items move across the space toward the central item, assuming their position around it. This potential for movement - from one item to another - can be checked by viewing visible links or pathways between items (figs. 5.3.12 - 5.3.13).

Therefore, the use of thematic nodes in the n-space model signals the existence of a number of definite points in the space between which items can travel. One other option - replacing dynamic news items - would be the use of multiple copies of items; as and when a relevant, linked item is called upon, a copy is made from a master held in an archived database and placed in position. However, the dynamic nature of the prototype allows for the movement of items. This facility permits the user to view information flow within a mirror of the (actual) news environment. Rather than supplying a static space, the prototype acknowledges - and makes explicit - the inherent dynamism within news and its communication.

5.3.4.3 Repositioning news items

Movement of items within the n-space prototype is often dictated by other items or elements - and the associated actions of the user - by their appearance and disappearance and the consequences of activity in the news agenda. As we have seen, news items can be shifted

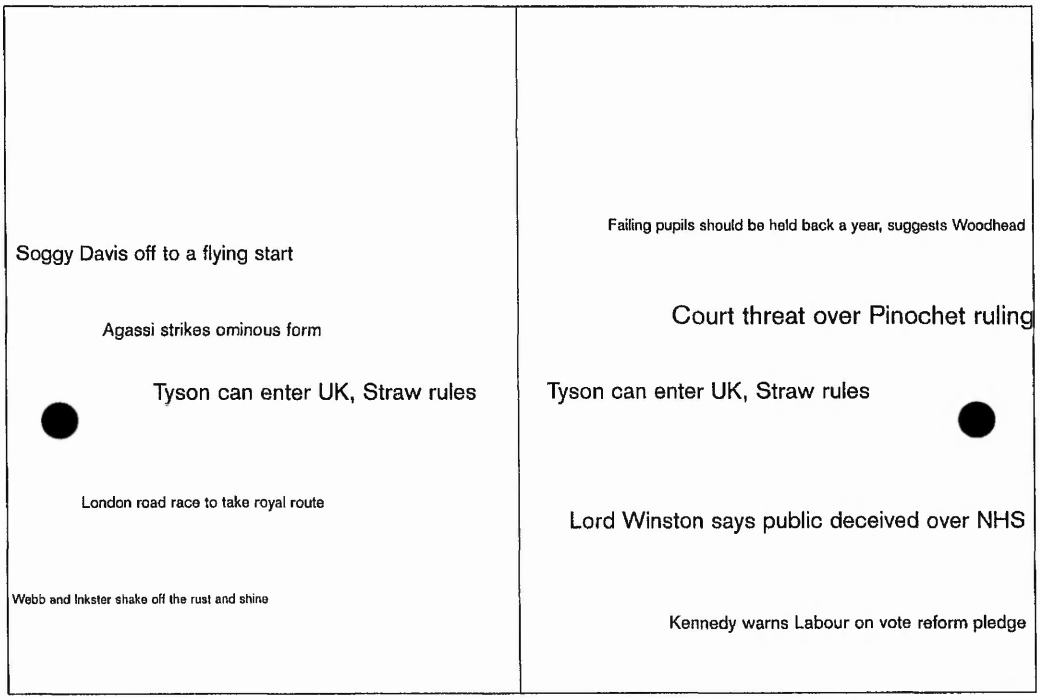

fig. 5.3. 11: one item shown in differing contexts.
Left: circling a sports thematic node. Right: circling a UK politics thematic node

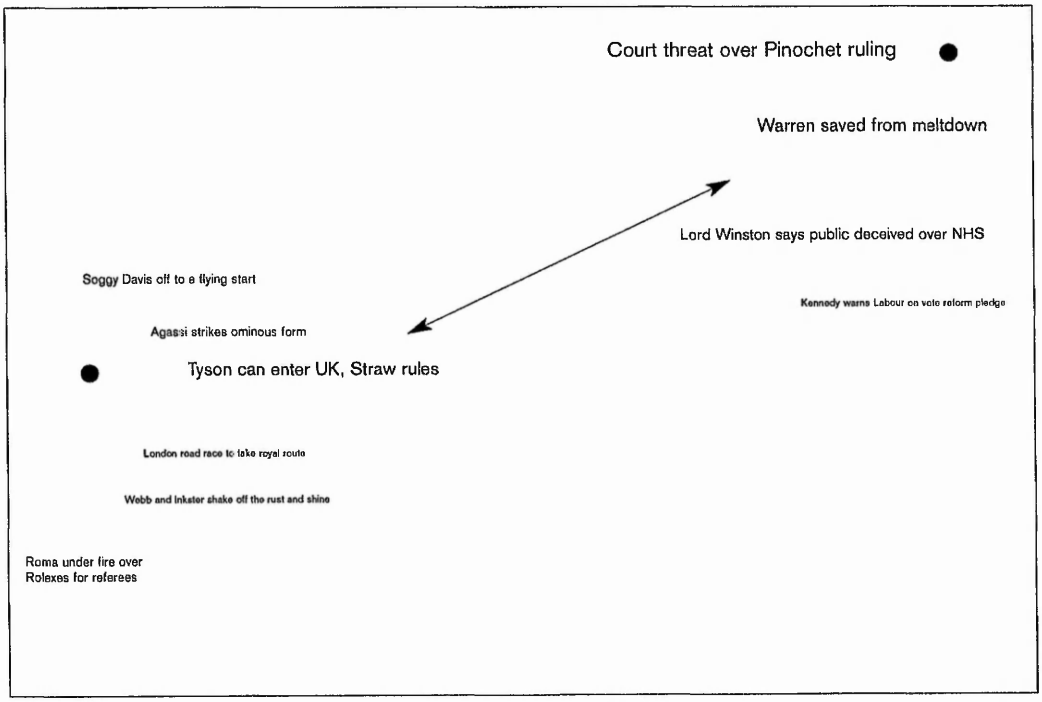

fig. 5.3.12: if either item is selected then its associated item, circling a different thematic node, travels across the space to be positioned around it

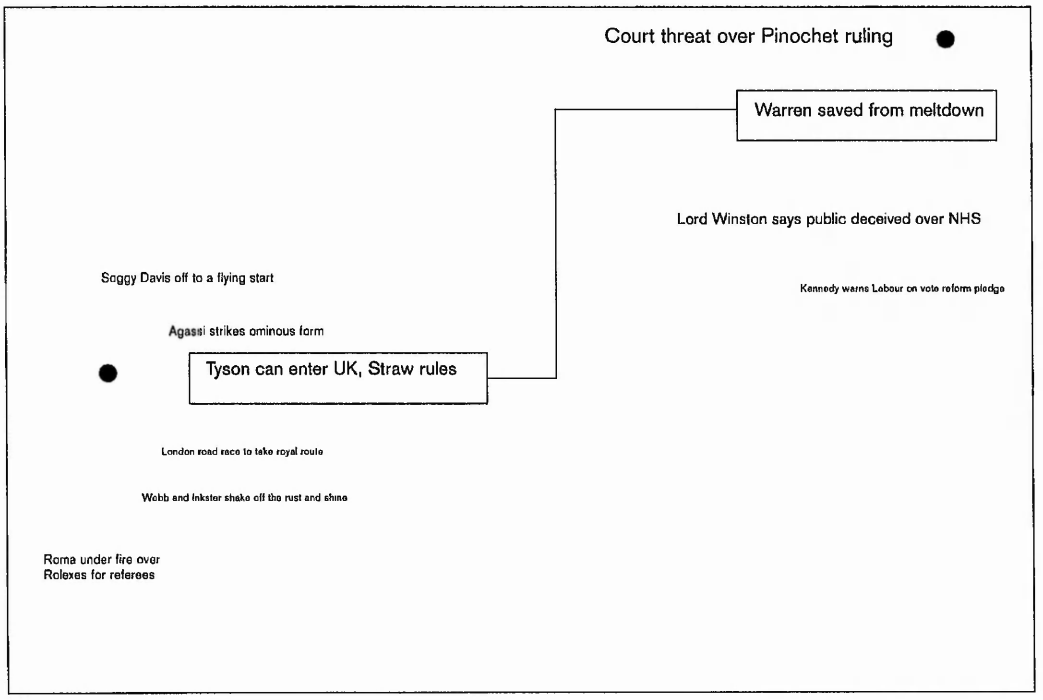

fig. 5.3.13: the link between these items can also be signalled explicitly, communicating a relationship across the n-space hard structure

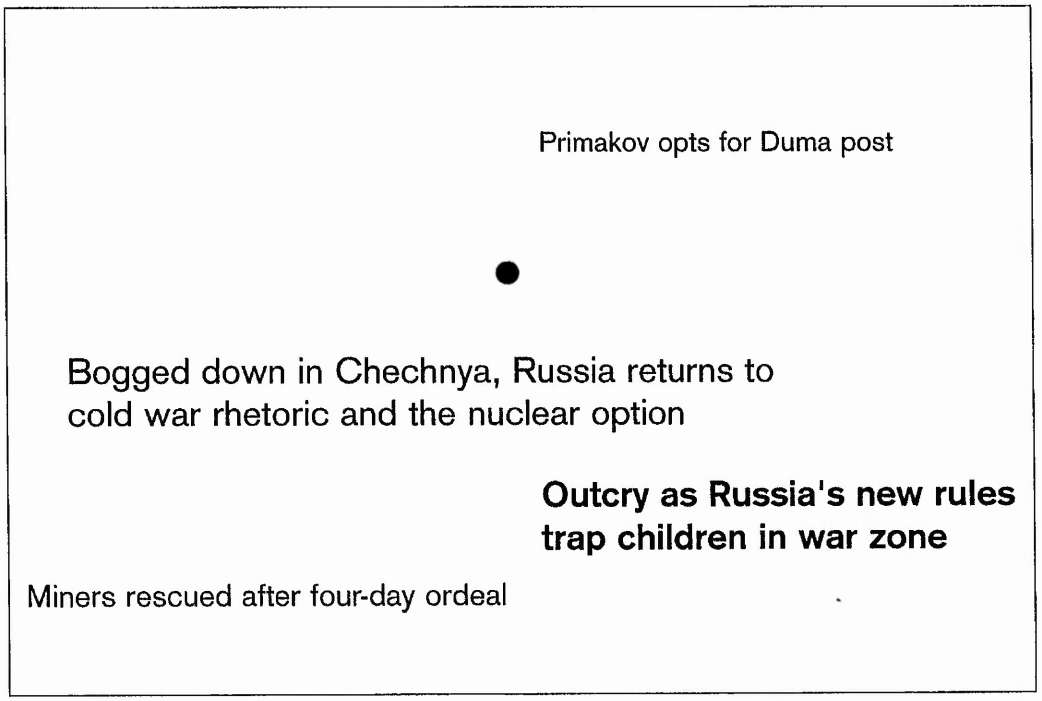

fig. 5.3.14: a news item being viewed by the user

across the space as linked or related items are selected. Also, as has been mentioned, items are encoded with a level of context-sensitivity; they are always aware of their place in both space and time (and in the hierarchy of news items or agendas).

As this chapter has recognised, news is an ongoing process. Events often occur with no respect to the timetables or fixed agendas of established news organisations. The existence of 'news embargoes', however, attempt to bypass the seeming random-ness of events. Reports or press-releases, for instance, are often embargoed, and news organisations are forbidden to report on them until a pre-established time. However, as the existence of rolling news services make clear, news is forever rolling new. Therefore, the means to accommodate breaking or sudden news reports is built into the n-space model.

For example, an item is being viewed by the user. Around it, linked items are positioned in the space according to the rules of spatial hierarchies outlined in chapter nine. However, as this online news item is being read, a news report is submitted whose content is linked to the central item. The n-space model is programmed to introduce new items as soon as they are available. This new item is of greater significance - or value - than others circling the central item so some reorganisation of those items is needed. As the item emerges into the space, it takes up its rightful place around the central item; its position - established by its pre-programmed news value - encroaching on that of others. Therefore, those overlapped items - of lower significance in the news hierarchy - are moved around and up (signalling that they are older items). In this example, notions of hierarchical visualisation - in both time and space - are illustrated. The new item is both more recent and more important than those it is surrounded by. These items are reorganised in order that this context is communicated; they are dynamic in the sense that they are able to move in response to a change in contextual circumstances (figs. 5.3.14 - 5.3.16).

As the n-space model - open to all available news channels and services - is likely to be in an almost constant state of flux; of movement and of action, this spatial reorganisation in response to temporal action/occurrences will be a continuous process. Although the news flow is said to be broken in this active mode of reading or using the prototype, on a more local level, items will be updated and repositioned as and when relevant items are created. This micro level of change reflects other changes on the macro, more general level: those that are happening in the background, outside of the user's scope, off the screen.

5.3.5 Construction: movement between elements

As we have seen, news items are spatially dynamic. That is, they possess an inherent capability to reorder and rearrange themselves on the n-space model's conceptual hard structure. Structurally, individual news items are themselves dynamic. More specifically, there is a form of motion or movement between the individual elements or soft structures which make up the presentational firm structure of one news item. As the previous news analyses of newspapers - and studies of reading pattern and habit - have shown, typography is used to signal informational hierarchies. Broadly, these hierarchies are used by readers to retrieve information on either a superficial or more focused level; a reader browsing headlines across a broadsheet newspaper

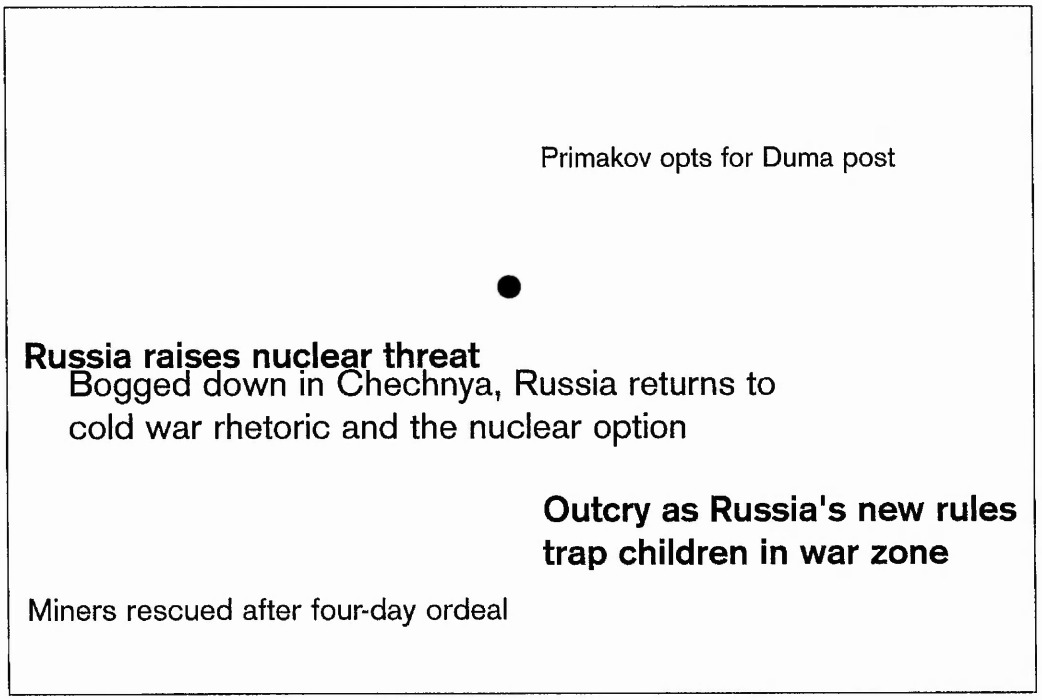

fig. 5.3.15: a new item is submitted and visualises in the n-space

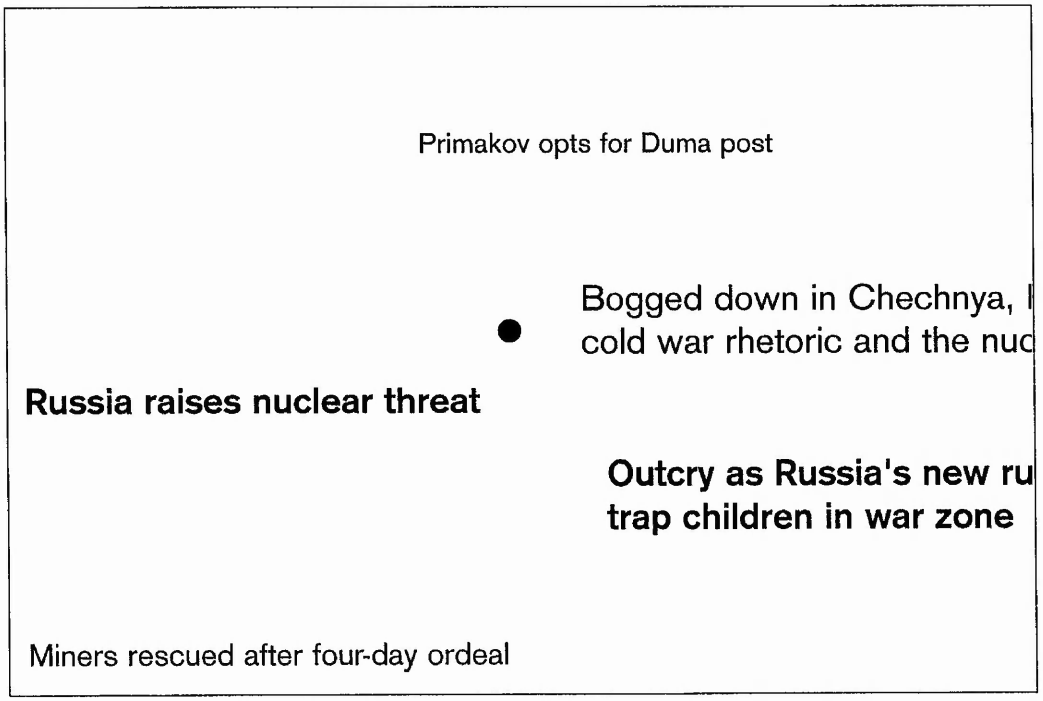

fig. 5.3.16: with this new item's entry, the other items are forced to reorganise themselves to communicate certain shifts in terms of hierarchy and time

double-page spread is in a continual process of high-level scanning and low-level reading. Typographically larger text - headlines - are tied to this higher level, smaller text - body copy - to the lower level. The content is likewise, incrementally richer; headlines supplying a particular amount of information, body text the full report.

A news item in the n-space prototype, therefore, is dynamic in terms of how it is constructed. As outlined in chapter 5.2, upon entry to the n-space a user is presented with a series of headlines: a number of high-level reading soft structures. It is then the choice of the user whether or not a news item is dynamically constructed in the process of being read. Each element in this process of construction is linked, although there are only two distinct levels of reading: headline and body. As a general rule in the model, other associated soft structures or elements of a news item - images, sound files, sub heads etc. - are classified as lower level objects. However, a number of additional mid-level options could be included. For instance, a user can direct the n-space to allow for the dynamic reconstruction of items along a specific, pre-ordered path: headline, sub-head, image and finally body text. Selection of elements as they are introduced calls up the next soft structure of the item.

This aspect of the n-space model recalls modes of reading printed news. The act of browsing and reading a story on the page is mirrored in the prototype; the degree of selection of an item in the n-space, for instance, deliberately recalls the mosaic layout of a printed broadsheet page. Also, the facility for user-driven dynamic construction of a news item is based upon the independent, privileged 'gods-eye' view the reader of printed news is given, able to read and recompose the item from the available, given elements. In the electronic n-space, however, user-control differs, is more flexible and open to alteration. The dynamics of each item can differ, in terms of how they are reconstructed; a user can therefore choose between a quicker read, from items composed only of the story's skeleton - headline and body text - or opt for a richer, full multimedia presentation.

5.3.6 Dynamic news items: communicative structures

A number of signalling systems for the communication of contextual information concerning dynamic news items are used in the n-space model. These structures inform the user of certain informational qualities of items in motion. Although not presenting high-level, content-driven information, notions of trajectory, direction, distance and speed supply context-driven, low-level, supporting or secondary information. However, this data can be valuable in assessing certain hierarchical or value-based qualities of an item.

Moving news items mirror the movement of the eye across the page or screen. Still and moving items visualised together on-screen make manifest a number of hierarchies and qualities or aspects to themselves and each other; a moving item item can be regarded as being transient and transitory whereas a static one seems long-lasting and fixed. These qualities raise a number of points about items in this model. Should a dynamic item positioned towards the top, left-hand corner of the screen be regarded as being more important than a static item placed at the bottom right? The n-space prototype rewrites certain established hierarchical rules or

conventions. An established - and widely recognised - vocabulary should be adhered to in order that confusion is kept to a minimum. The n-space model utilises new communicative structures in order to signal hierarchies and priorities for both static and dynamic news items.

5.3.6.1 Trajectory

The path of an item when it is in motion is its trajectory, the course or route it takes between two points. In this illustration, the item's path - viewed from a high 'distance' from the surface of the space - allows the user to see its route, communicating something of the nature of the item. Firstly, the fact that the item is moving might imply that it is requested elsewhere. Also, seeing the point from which it has left and where it might be headed explicitly signals that there is some kind of link between these two points.

The moving item makes a connection between two globally thematic topics, its movement and locally specific content bridges that gap. The news item's trajectory can be made visible by the user, externalising it into or onto the n-space's surface and making this link explicit. Like a public transport route map, the n-space model's use of explicit linkage signals its pathway or pathways - since a number of connections can be made from one item - and potential for movement and dynamism which the user can follow. Also, if the item is moving without the user's prompting, having its trajectory made visible may allow the user a greater understanding of why it is being moved (figs. 5.3.17 - 5.3.18)

5.3.6.2 Direction

Like an item's trajectory, its direction of movement signals to the user certain ideas or qualities concerned with the n-space model's notions of space, geography and topography. The direction of an item communicates towards which thematic node it is travelling. For instance, if four thematic nodes occupy the space, the reader will be aware - albeit approximately - of their position and their content-type. An item travelling in the direction of one of the four will therefore reveal its destination and signal something about its content, relevance and context (fig. 5.3.19).

The direction in which an item is travelling is closely linked to the use of the x, y and z axes in the n-space prototype. Whether moving left, right, up down, away from or toward (the front) of the conceptual hard structure of the space, a specific aspect or quality to that information is signalled by the act of movement. An established vocabulary is set up by the n-space model; the vertical - or x - axis denotes a sense of time and chronological organisation; the horizontal - or y - axis communicates thematic or conceptual connexity; the z axis signals hierarchies of importance and priority. Movement along any one - or more than one - of these axes, therefore, communicates specific information linked to this meaningful vocabulary.

5.3.6.3 Rotation

Since axial movement is being discussed, the point that news items might not travel in straight lines can be introduced. Items may be presented rotating a central item. Travelling along all three axes, an amount of information about that item is being communicated, some of which

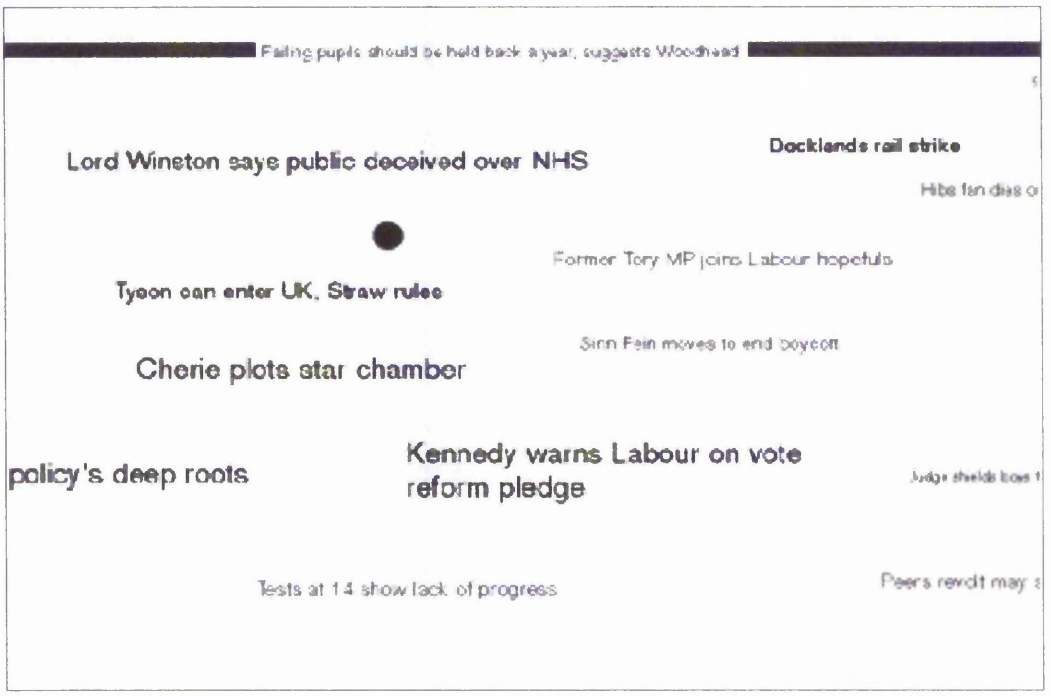

fig. 5.3.17: an item's trajectory is visualised, illustrating its movement

fig. 5.3.18: the item's trajectory is illustrated within a wider view of the n-space.
Here, two other items are moving across the space with their trajectories visualised

fig. 5.3.19: a news items signalling its direction of travel

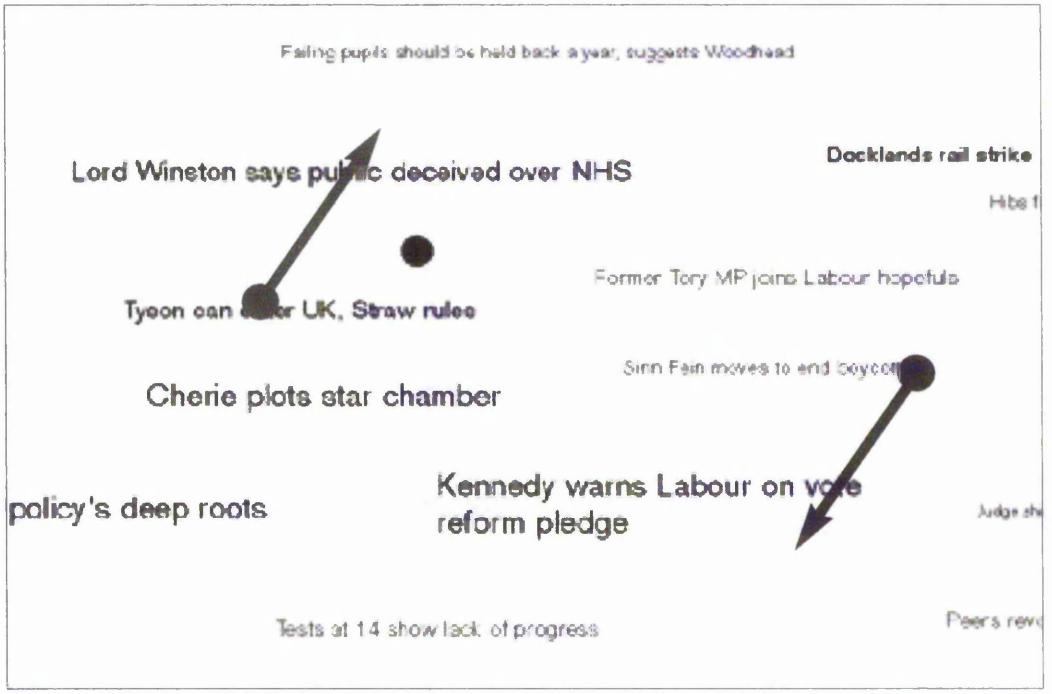

fig 5.3.20: two news items signalling their rotational direction

seems contradictory. However, the n-space model's rules can be simplified in the case of rotating items; a distinction being drawn between clockwise and anticlockwise rotation. Satellite items rotating clockwise signal that they are items created in the last twenty four hours - recent news - whereas anticlockwise items signal a movement backwards in time, and are in fact older than twenty four hours (fig. 5.3.20).

5.3.6.4 Distance

The distance an item moves across the n-space model's conceptual hard structure may not be of immediate concern to the user. Unless the item is followed along its path, its distance travelled may not be judged. Distance between thematic nodes in the prototype are arbitrary to a certain extent, since they are established by the user and reflect their taste and discrimination. An item travelling between two very distant nodes may be thought to be linked only tenuously, since those nodes may seemingly have very little in common. However, the fact that an item is linked dynamically and moving between points in the space is evidence that a link exists.

Distance between individual news items - along any of the three axes - signals a great deal; their relative space - the gap between them - communicating how close or far apart they are in terms of content, time or priority. A news item, travelling towards another - central - item might notionally be travelling backwards in time if that central item is older.

The n-space model's conceptual hard structure is seemingly boundless and continuous. Notions of distance and spatial difference are essential in the communication of this on-screen, electronic news. Measured distance signals the space between two points, although in the case of this model spatial distance stands alongside temporal, conceptual and prioritorial. Again, in the n-space prototype, what was previously inherent in the communication and dissemination of news - notions of distance, for instance between ideas - is being made explicit and dynamic (fig. 5.3.21).

5.3.6.5 Speed

A news item moving across the n-space's conceptual hard structure moves at speeds which again signal certain qualities of information about it. For instance, an item moving at high speed toward another point in the space is regarded as being important since it needs to reach its destination in hurry: it may be a breaking news item, for example. A slower item is regarded as being in less of a hurry and therefore less important; its link might be less direct. This slower item - unlike its speedy counterpart - allows the user time to read it as it passes their viewable area. It can therefore be caught; trapped and frozen in its journey if the user wants to explore this item further.

5.3.7 Rogue news items: serendipity mechanisms

The use of thematic nodes - user-established points of contact and entry for news items - implies that the n-space prototype will be, in terms of content, a strictly controlled environment.

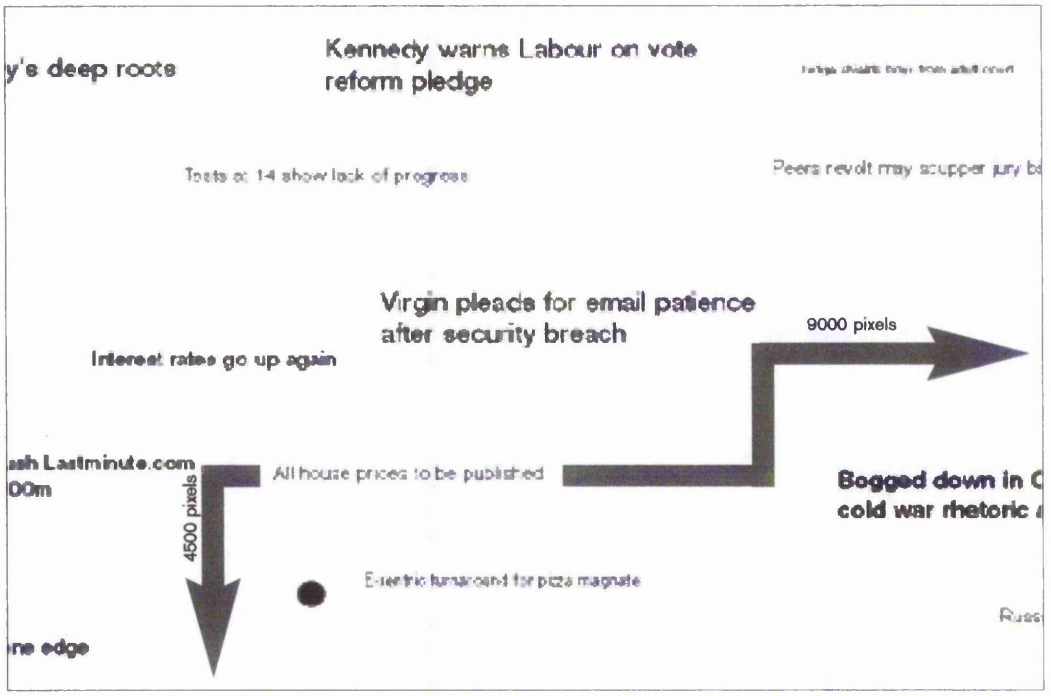

fig. 5.3.21: a news item signalling the distance between its points of destination and arrival in the n-space

fig. 5.3.22: the main news item communicates its date and time of transmission explicitly to the user. Surrounding items signal their positions in the temporal hierarchy.

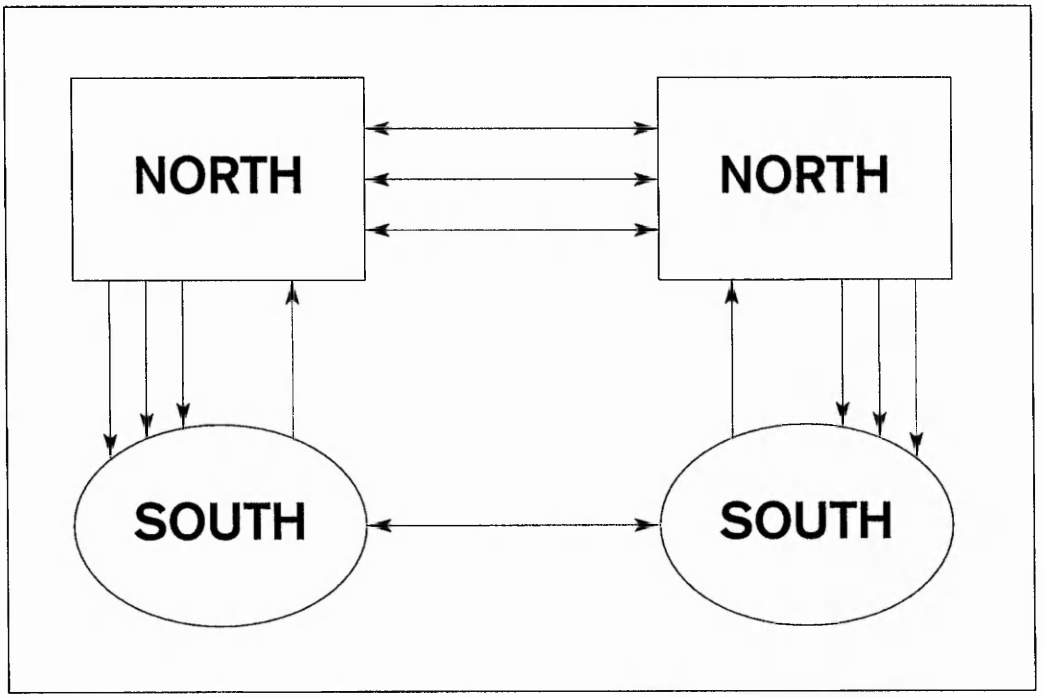

fig. 5.3.23: Alleyne's model of global news flow

By setting preferences directly linked to personal taste - although this may not be the case for every n-space user - a great deal of information may be excluded. This argument is often used to discount the 'Daily Me' model for electronic news transmission; that if a user/reader isn't interested in politics they might not receive very important political news, the result of an election, for instance.

The n-space model, therefore, comes built in with a specific 'serendipity mechanism' whose function it is to supply this important information which may otherwise be unknown. Rogue news items are free-roaming, dynamic, unrestricted and nomadic news stories which drift around the prototype's conceptual hard structure. Following the user's path, they congregate on the peripheries, and if needed, barge directly into the user's viewable area.

One further use of rogue news items relies heavily on their unfixed quality. These stories - unheard, seen or read in traditional forms of news - exist outside current systems of content-oriented classification. Newsletters, press-releases or small-press output still have a place in the n-space prototype, but like today's traditional news transmissions it cannot pin them down. As such, their manifestation is of a roaming, nomadic news item, outside the mainstream news agenda. However, if the user did want to view items traditionally considered marginal then their thematic nodes can be recalibrated accordingly. This would ensure a clear level of personalisation.

Rogue news items maintain the sense of randomness recalled in the mosaic presentation of the newspaper page. All users will therefore be made aware of stories which might be judged momentous or of immediate concern through the use of these dynamic, ever-moving elements.

5.3.8 Temporal hierarchies

Specific values and hierarchies exist in news based around the notion of time. At its most simple, this means: the more recent a news item is the greater its worth. As has been outlined, the n-space prototype signals time - and an item's place in time - through the use of the x-axis. This communicative structure signals generally, the position of an item in its immediate context. That is, with reference to its surrounding - linked - items, a user can locate one item within a chronology.

More specifically, each item is tagged with its time of transmission, alongside other details such as authors' name. Therefore the prototype allows users to fine tune the temporal hierarchies used in the n-space, establishing and locating the newest news item (fig. 5.3.22).

5.3.9 Summary

As recognised and outlined, the n-space environment is founded upon dynamism in its aim to reflect news flow. The systems discussed in this chapter aim to allow the user to interpret certain aspects of this dynamism and extend the communicative potential for on-screen news.

5.4 Visible links and networks

5.4.1 Introduction

As has been discussed, the notion of connexion - in particular electronic forms of connectivity - runs through this study. As is evidenced when using the WorldWideWeb, connexion allows the user particular forms of hypertextual reading.

In terms of the n-space model, connexion underpins its rationale. Attempting to navigate and make use of a seemingly boundless environment with seemingly endless connectivity raises numerous issues regarding user interaction. Notions of visualing forms of connexion in order to make their conceptual and hierarchical frameworks explicit are explored and developed.

5.4.2 Networked information

> "If linear and hierarchical structures dominate current writing, the computer now adds a third, the network as a visible and operative structure. The network as an organising principle has been latent in all written texts..." (Bolter 1991, p. 113)

In this excerpt, Bolter acknowledges the emergence of the network - as a structure for organisation and navigation - in relation to the growth of electronic reading and writing in light of developments in digital computer technology. A network consists of links and nodes; pathways and points of intersection. The networked electronic communications space of the WorldWideWeb marks this structure as a fundamental system for information transaction, with the potential for countless millions of associated connections to be made (written) and navigated (read).

The action of 'reading' a networked hypertext involves an obvious linearity - implied and reinforced by alphabetic/typographic culture - but also opens up the writing space of the text to embrace non-linearity.. Landow and Delany (1991) outline two other intellectual characteristics of this processed electronic reading: association and instantiation. Briefly, association is "...a centrifugal movement, whereby an individual block radiates out into the textual field...", involving and connecting with (making links to) parallel 'blocks', "...and, more importantly structuring those links into a pattern that goes beyond simple annotation into the realm of interpretation." (p. 34) Instantiation "...reverses this movement of the mind: we begin with the general...then develop a structure of evidentiary support for the theory in the text." (p. 34)

This non-linear model of electronic reading and writing is a fundamental 'visible and operative structure' of the n-space model. The potential offered by the prototype - of a seemingly limitless topography inhabited by fully hyperlinked news items - allows an environment of unlimited

connexity, similar to the Xanadu paradigm developed and refined by hypertext pioneer Ted Nelson where "all data...may be connected sideways and out of sequence to (all) other data." (Nelson 1994)

Linkage - and its co-commitant processes and mechanisms and actions - is brought to the fore, made explicit - visible and operative - in a previously discrete mesh of linked nodes. The n-space model makes the network more explicit in its system for signalling relationships (links) between news items and in visualising the organisation of themed items in the larger context of the space in general.

5.4.3 Three levels of abstraction

Non-linear hyperlinked connexity develops and extends certain assumptions concerning strategies and principles for reading. Slatin (1991) describes one assumption: prediction.

> "All but the most naive and inexperienced writers recognise that all but the most naive and inexperienced readers inevitably and rightly make inferences about what's going to happen next, on the basis of what they have already read - not only in the current text, but in other texts resembling it." (p. 154)

The reader's 'perception of the predictability' is determined "by different things and at different levels of abstraction." (p. 154) In terms of the n-space model - and systems of hypertext, in general - these levels of abstraction can be mapped onto levels of textual hierarchy or network. These hierarchies or networks or hierarchies of networks represent levels of entry or exit; bi-directional points from which or through which a reader/user arrives or leaves a particular text/news item.

While Slatin regards these levels of abstraction as a means for understanding the predictability of any text, this predictability is also essential as a function for understanding relationships between levels of hypertexts in the n-space prototype. From a single word to a grouped associative micronetwork of connected news items, the n-space presents the link itself as a fundamental structure - a soft structure - in the processes of electronic reading.

The n-space model can be seen to have three distinct levels or hierarchies of network: high-, mid- and low-levels. Importantly, each of these hierarchies is an explicit structure; links are plotted between nodes visually in order to communicate these relationships to the reader/user. Without some form of 'roadmap' for this mesh of interconnected items, the network remains implicit and invisible. This aspect of the prototype will be discussed later in this chapter.

5.4.3.1 Low level: micro(scopic) visible network

Following Slatin's model, the lowest level or hierarchy of visible network in the n-space prototype is termed the micro. At this level, the reader/user is presented with a network of node/link structures related to their understanding - and prediction - of pathways of reading within a news

item. This 'readability index' relates to the function of such factors as paragraphing, sentence length, complexity of phrasing or sentence length (fig. 5.4.1).

This visible network of linked nodes is concerned with signalling textual micronetworks of meaning or association. At this level in the model's hierarchical structure, the user is concerned with and is viewing the item's body copy. The levels of intertextuality, therefore, permit the reader to browse the fragmented narratives of a number of interrelated items. It is theoretically possible that each word of the selected - central - new item is an exit point: a link to other prespecified entry points - words, sentences, paragraphs - in other news. Factors concerning selection and attribution of exit points to entry points is obviously a matter for discussion. However, the model's conceptual basis, and this text's focus upon key issues in communication design in electronic news delivery prevent this discussion from occurring.

It should be acknowledged that the authorship of links in the copy of digitally presented news items - on the WorldWideWeb, for instance - is the source of argument, debate and disagreement at the time of writing. Perhaps this issue may not be resolved satisfactorily, but for the sake of this theoretical prototype Theodore Nelson's model system - Xanadu - is the main point of reference.

At this microlevel of the visible network, the user may be more closely involved with accessing 'secondary codes' of information (Landow and Delany 1991, p. 10) This level of the network can present linked news items which may serve the same purpose as footnotes or endnotes: as supplementary forms of text excluded from the body of a news item. These 'patches' of text "...create a secondary textual space..." and "...such divisions of text partake of fixed hierarchies of status and power." (p. 10) This supporting information, although presented in the same textual space, is secondary to that being linked from. The microlevel of the visible network is primarily concerned with supplementing the user's understanding of one specific - central - news item.

> "Hypertext linking situates the current or 'on-screen' textual unit at the centre of the textual universe, thus creating a new kind of hierarchy in which the power of the centre dominates that of the infinite periphery. But because in hypertext that centre is always a transient, decentreable virtual centre - one created, in other words, only by one's calling up of that particular text - it never tyrannises other aspects of the network in the way a printed text does." (p. 11)

The concept and use of the 'moving centre' which Landow and Delany describe is outlined later in this text. All levels of the visible network structure in the n-space model - by their hypertextual nature - are dominated by this idea of the virtual, shifting centre. All hierarchical levels depend upon user selection to specify this centre, around which linked elements are placed.

5.4.3.2 Mid level: macro(scopic) visible network

Again following Slatin's model, the mid level of the prototype's hierarchy of visible networks is termed the macro level. Here, the reader is aware of a broader range of content, rather than focusing on the content or body copy of one news item in particular, the user is shown that item

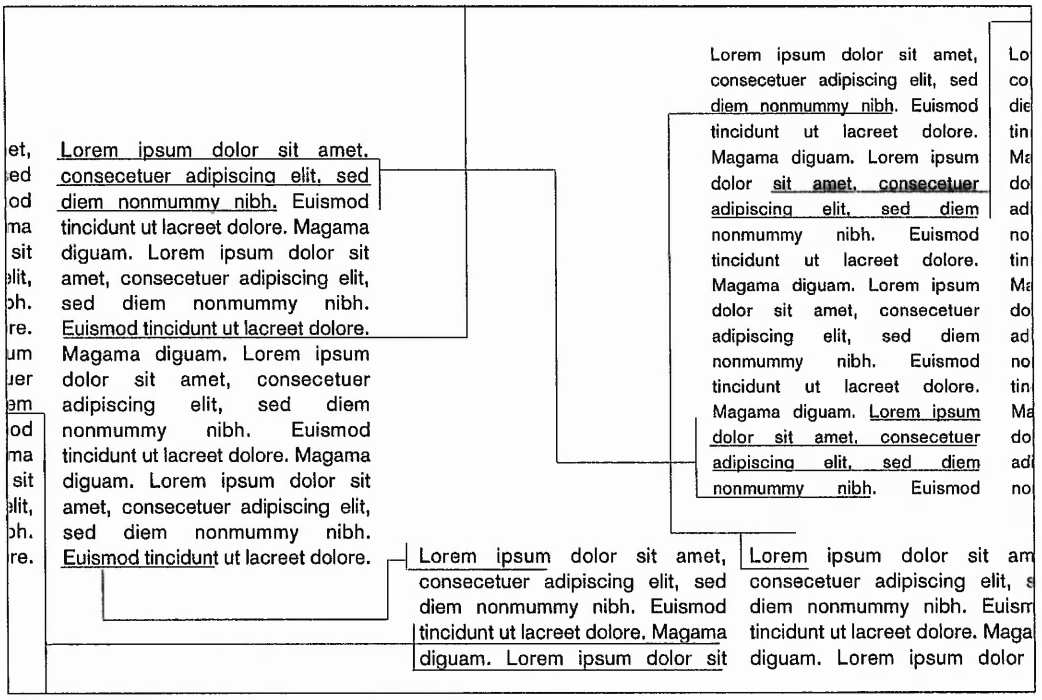

fig. 5.4.1: low level: micro(scopic) visible network

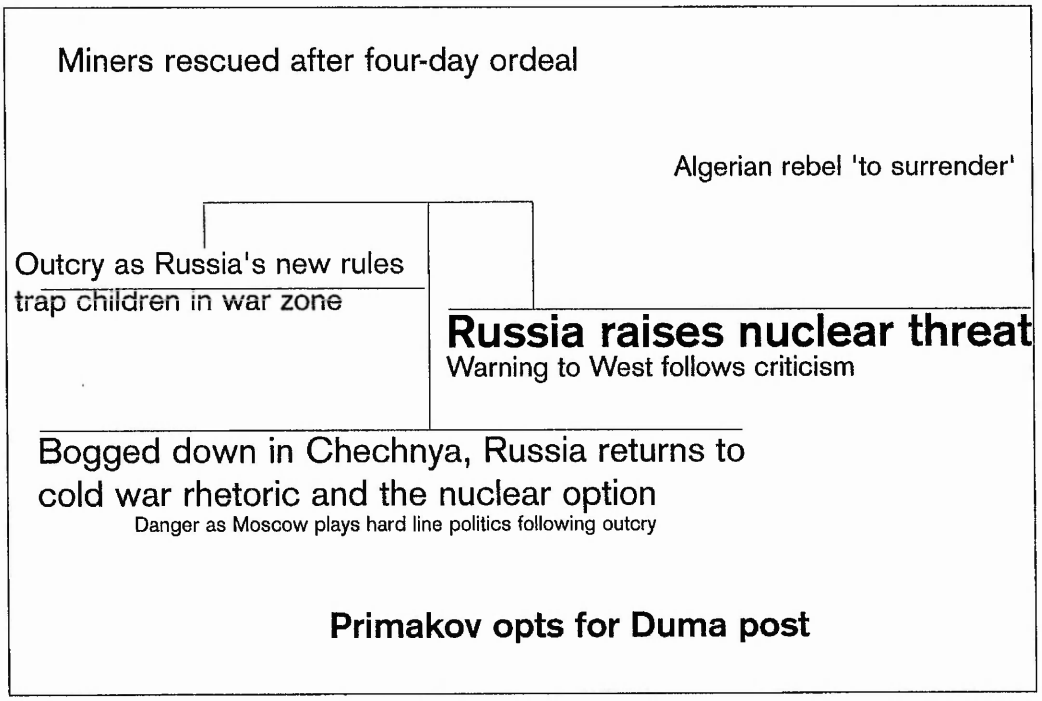

fig. 5.4.2: mid level: macro(scopic) visible network

in its direct informational context. At this level, qualities of intratextuality linked to aspects of subject matter, topic and sub-topic can be visualised. Here, "...the structural devices organising the text as a whole - sections, chapters and sub-chapters.." (Slatin p. 155) are displayed to the user in a constellation of discrete news items; a grouped, associative collection of - primarily - themed headlines.

The explicit mesh of connections between these elements is visualised, again with the use of connecting lines. At this mid/macroscopic level of the visible network, headlines are positioned in the n-space environment alongside other soft structures.

As chief soft structures and high level exit points, links are made between the headline of each news item. Either grouped around one thematic node or as an associated collective or grouping of news items, the macroscopic visible network presents an organised, structured mesh of connexions. With their linkage expressed explicitly, users are aided in their understanding of the connectivity between items (fig. 5.4.2).

5.4.3.3 High level: metatextual visible network

The metatextual level of hierarchy of the n-space model's visible network is one in which the user is unable to make inferences about the content or text of individual news items. Rather, the space as a whole - as if viewed through a wide-angle lens - is presented to the user/viewer. Here, content is generally gleaned and understanding largely gained through context; the topographical or spatial context of a number of items in the space. (Slatin p. 155)

Attempting to visualise the space as a whole - and communicate significant amounts of information - is impossible. Instead, viewing the prototype at this highest - metatextual - level of the visible network signals to the user the general relationships between items. The explicit network brings to the fore the underlying structure - and associated organising principles - that 'are latent in all written texts'. At this level, hypertext links between items are presented; the space presents a complex arrangement of shifting items and the associations or links between them. Since the space is always in a state of flux, as the items move their connections move with them. At this level, the visible network is drawn and re-drawn; lines sweeping in arcs across the space as items are shifted to new destinations (fig. 5.4.3).

5.4.4 Explicit structures

Each node of the hypertextual network of the n-space model is an exit point to another potential centre. Again, Landow and Delany offer specific pointers towards understanding and signalling the 'rhetoric and stylistics of hypertext'. The visible network is one means of addressing problems of navigation and orientation in a seemingly boundless electronic space. These problems could be classified as the following: how can users be oriented in the n-space and read efficiently, and with pleasure?; how can links indicate their destination?; how can users feel 'at home' in this - at first - bewildering environment? (Landow and Delany 1991, p. 19)

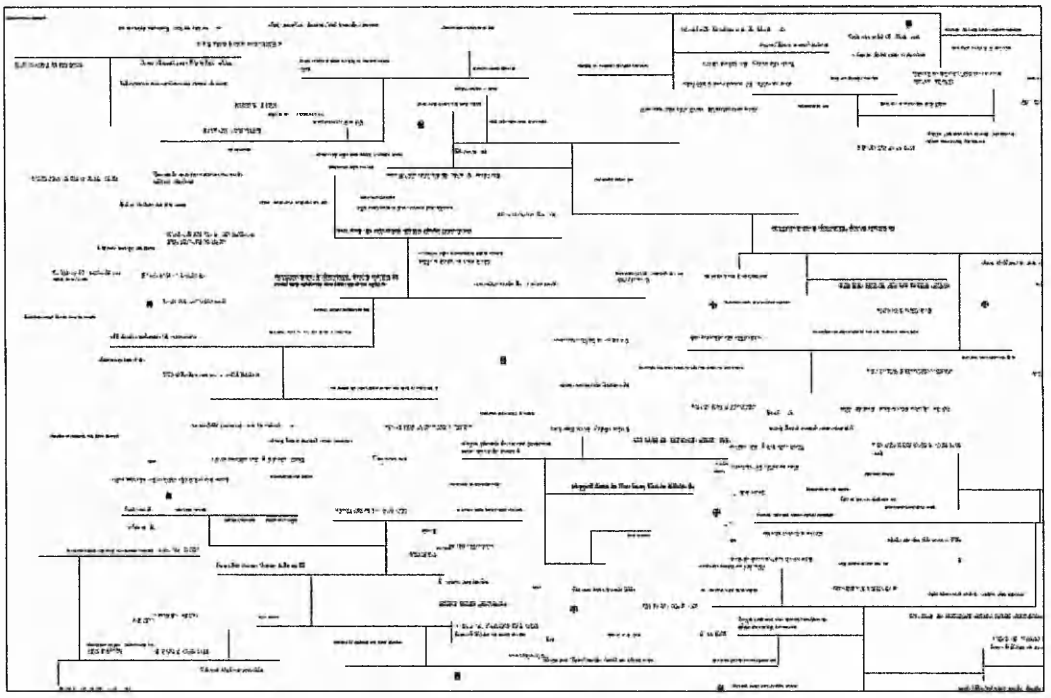

fig. 5.4.3: high level: metatextual visible network

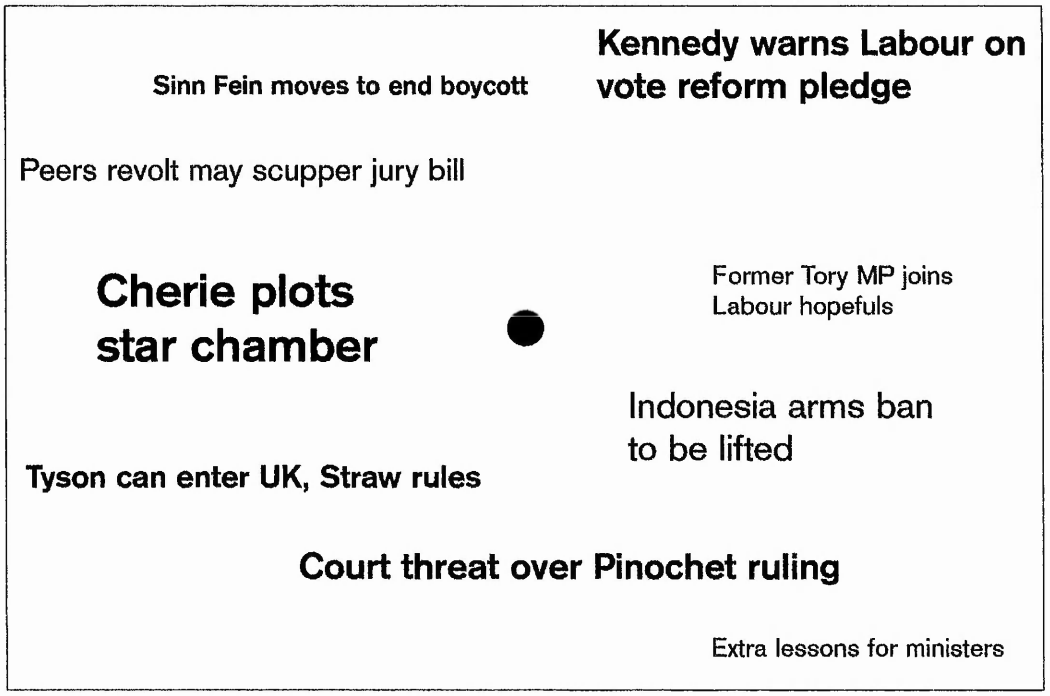

fig. 5.4.4: a thematic node - UK politics - surrounded by items sharing this theme

Attempting to answer or address these problems, we can say that the first concerns navigation. The use of thematic nodes in the n-space prototype presents the user with specific points of access, coded to signal specific topic selection. The space can be navigated solely with reference to the nodes; their content signalled by either colour or explicit titling. Therefore the thematic node is one explicit structure used in the model (fig. 5.4.4). The visible network is a second, and addresses points two and three: the need to signal both arrival and departure information to the user. It provides a route map for each link in the hypertext, where they come from and where they go (fig. 5.4.5). The path of the link is traced by joining two points with a single line.

This network signals the implicit informational structure of the linked texts. The figure below illustrates a thematic node. Around it are news items of a similar theme. A modification to the n-space model, triggers a visualisation of this network: all thematically news items around this node are shown, as are their connections to it. This form of explicit network presents to the user a navigable structure, all the potential pathways along which they can travel.

The visible network of links visualises the links only of the central - selected - news item. This network changes as user-selection changes. Instead of a passive visible network - as outlined in the case of the thematic node - the network of user-driven links is active.

5.4.5 Multiple connections

In the discussion of networked hypertexts in the n-space model, the central aspect of investigation has been the potential for unidirectional links. Specifically, this has centred around one-to-one link/node structures. As discussed, models of hypertext illustrate a single link/single node structure, where one discrete piece of information leads - via one exit point - to another node (fig. 5.4.6).

The n-space prototype presents the user with the opportunity for multidirectional links. One exit point can lead to any number of distinct entry or arrival points. This form of network is signalled by the single exit point leading to a number of destinations: each explicit link can be followed to its specific point of entry in the next news item (fig. 5.4.7). User choice determines which link will be followed; hierarchical rules as outlined in previous discussion of the prototype may be implemented in the organisation of these links in order to signal to the user a set of guidelines of news-worthiness.

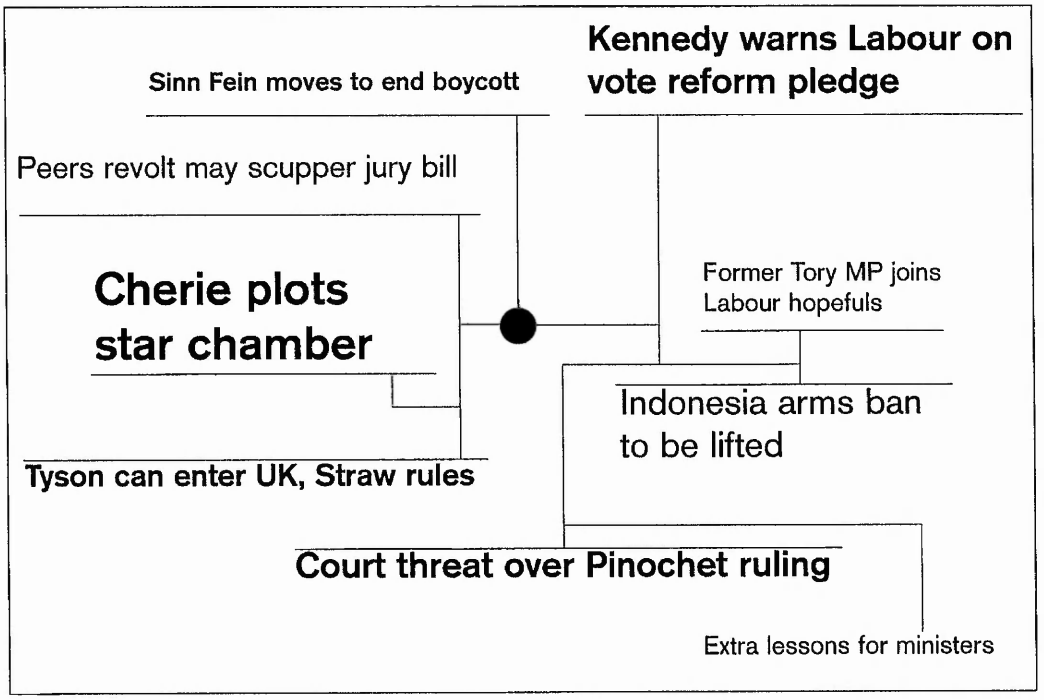

fig. 5.4.5: visualisation of the network between these themed items is triggered, including their relationships with the node itself.

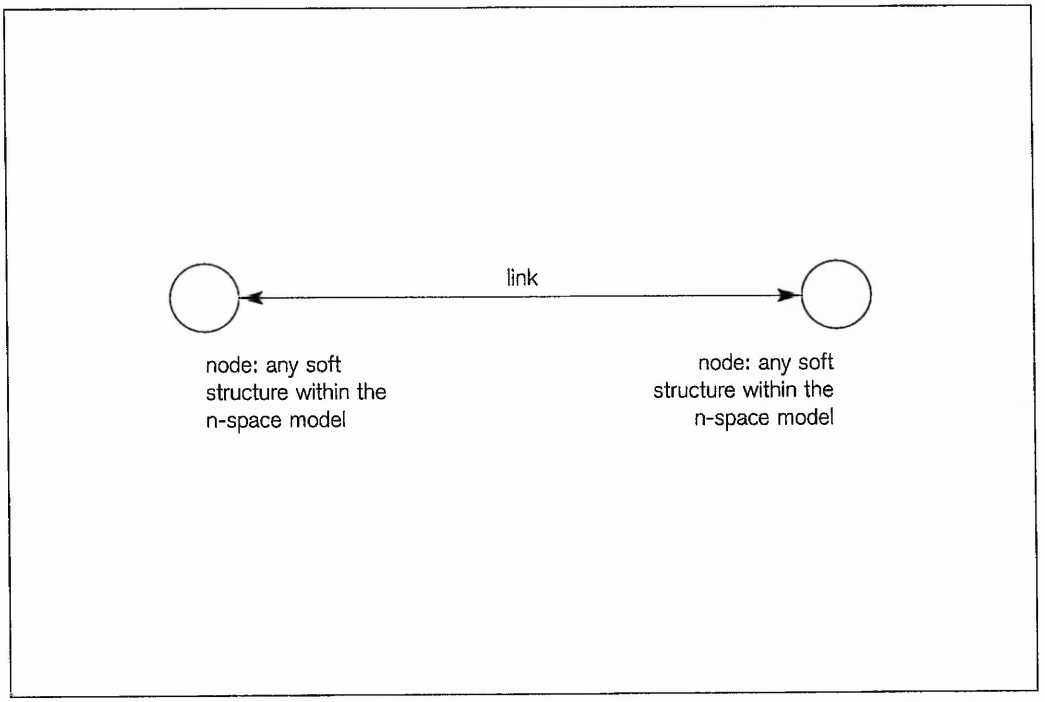

fig. 5.4.6: single link/node structure, as widely used in existing hypertext systems

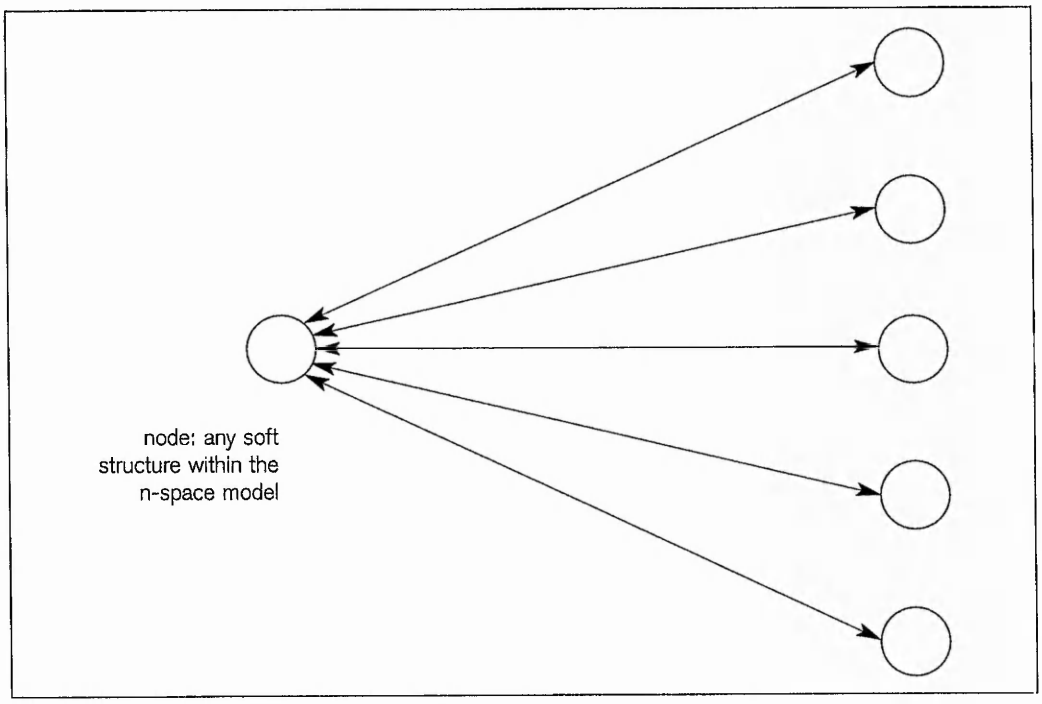

fig. 5.4.7: multiple link/node structure, as used in the n-space model. Multiple destinations can be arrived at from one node

5.4.6 Summary

Apparent unbounded connectivity could obviously be regarded as slightly fanciful. The Web's single link/node structures present users with certain difficulties regarding navigation and user-control/understanding of the environment being investigated.

Visible networks and explicit links - visualised upon a number of conceptual levels - in the n-space model might go some way to aiding end-users in what could possibly be a hectic, confusing experience. By externalising underlying, implicit structures the n-space model aims to reduce confusion and communicate some form of clarity in terms of its capacity for linkage and connexion. However, it is recognised that an element of user-controlled scaling back of this connectivity may be included in the prototype during the implementation process.

5.5 Electronic columns

5.5.1 Introduction

As has been discussed in this text, the notion of communicative cliches being carried forward into the n-space model addresses certain aspects of user-familiarity and expectation when confronted with new conceptual spaces for the communication of news.

It is recognised that the column is such a cliche and alongside its inherent flexibilityand dynamic capacity is a powerful osft structure for reconfiguring and recontextualisation in the n-space model.

5.5.2 Electronic columns

An electronic column is one used in the n-space prototype for the purpose of communicating the content of a particular news item. Electronic columns exist on-screen and are dynamic soft structures, that is they respond both to user-interaction and to the other systems and processes of information management and processing outlined earlier in this text.

5.5.3 Pages, screens and columns: hard and soft structures

Both the page and the screen can be classified as hard structures, using Bolter's (1991) terminology. Information is presented upon these hard structures by the use of certain soft structures: "...those visually determined units and relationships that are written on or in the hard structures." (p. 41) The use of soft structures - Bolter points out - "transforms that surface..." of the page or the screen "...into an articulate writing space." As has been outlined earlier in this text, the use of soft structures provides a system for organising and visualising specific forms of information; these organised collections of soft structures I have called 'firm' structures.

One soft structure whose importance as the key informational unit for presenting written or printed information in the n-space prototype has been recognised in this text is the column. The column can be defined as a vertical division of a printed page; more specifically as a single unit collecting and presenting lines of printed or written text whose line length is set. This structure is itself set to a prescribed height, predetermined by the respective hard structure's physical size. Column width and height are fixed by a designer whose role would be to devise a system to facilitate the information's clear communication.

5.5.4 Narrative: flow and interruption

A written or printed text is the representation of a narrative; an account of connected events in order. Narrative flow is concerned with time and the notion of a sequential system communicating information through or over a period of time. The visualisation of printed or textual narrative flow on a page - most often in columns of text - is, according to Michael Twyman's schema for studying graphic language a 'verbal/numerical, linear-interrupted system'. Pages and columns interrupt textual narrative, fragmenting narrative flow and disrupting time.

> "In practice, linear flow of text is nearly always interrupted... (T)he reasons for this practice are various (ergonomic, perceptual, practical) and apply throughout the world whether the direction of reading is left to right, right to left, or top to bottom. Normally, line breaks do not relate to semantic units. Lines are usually more or less of the same forms." (Twyman 1990, p. 207)

Here Twyman is recognising the fragmentary and fragmented nature of linear text; the column is necessarily broken - and the narrative subsequently split - since it must be presented on a particular hard structure - whether on page or on screen - and is therefore limited by that hard structure's physical size.

5.5.5 Columns and technological development

The column is the definitive organisational structure in written communication. In terms of printed news, its role and function is both as a system for structuring information and signalling hierarchies. "The column...is a prerequisite for legibility...an indispensable aid for creating order, for enabling the priorities to be focused...an 'automatic organiser'." (Evans 1973, p. 68)

Emerging from the development of conventions of book typography, the earliest newspaper designers devised their own soft structures; the column being perhaps the most significant. (Twyman 1970, pp. 111 - 115; Hutt 1973, pp. 9 - 17)

> "In the history of newspaper design nothing rivals the invention of the column. No modern newspaper could communicate coherently and economically without constructing its pages from a basic grid." (Evans 1973, p. 67)

The column-derived mosaic visual language and style of printed news - its distinctive identity - grew from this invention, resulting in a sophisticated interface for communication. This solution was developed in response to new, emerging problems or questions of - or related to - communication design. These problems and questions were dictated and defined by a specific shift in technology and the resultant social and political changes and decisions. Developments in printing technology and publishing led to the emergence of a new readership and a need for ever-newer news, both domestic and international.

> "Only when the printer or designer was faced with new kinds of work to produce, where there were no real models to follow and where practical considerations were often paramount, did he begin to break away from his own conventions and design in order to solve particular problems." (Twyman 1970, p. 111)

In a parallel to the problems facing printers and designers at the historical point of emergence of the printed newspaper, the shift in communications technologies currently underway resurrects these same concerns: the n-space model is one such response to the perceived need for new solutions - and related conventions - to the problems posed by new, electronic news.

Printed news drove developments in printing technology; growth in circulation due to public demand and the abolition of so-called 'taxes on knowledge' played a significant part in forcing an almost constant revolution in printing machinery. As Twyman (1970) comments, "(t)he pressure for improved performances in the speed of printing machines had little to do with general and book printers; it came from the newspaper and periodical press, and initially almost exclusively from the proprietors of The Times." (p. 52)

Again, improvements and developments in electronic communications technology are in part driven by a need for up-to-the-minute information from a growing variety of sources; from established news signals on the Web, to emerging electronic news delivery mechanisms and organisations. Technological development, in this case, can still be seen to have the same needs and wants as those pushing the speeds of mechanical printing presses.

A visual response to the technological issues raised by the developments in printing technology; a visual language of printed news communicating through a seemingly complex structure centring around the column as a unit of information appeared. This non-linear, pictorial system is dominated vertically by the use of columns in the grid structure and horizontally by the placement of typographic soft structures like the headline, the sub-head, the caption and the byline. The column therefore is an essential element in the system for navigating and orienting the reader on the newspaper page.

Twyman (1990) recognises the instinctive form of reading-potential inherent in the use of the column in the mosaic/matrix pattern of printed news design. "...(T)he directed viewing associated with...popular journalism is more intuitive and open to a wider range of reading/viewing strategies." (p. 212) As the basis of this system of 'pictorial and verbal/numerical non-linear directed viewing' the column must be recognised as being a significant achievement in the development of newspaper - and to a wider extent communication - design, and their associated language technologies. The column's importance as a definitive soft structure should therefore be acknowledged, and its role in the n-space prototype guaranteed.

5.5.6 Column as design cliche and support tool

The use of columns in printed news is, as we have seen, a factor in the development of its distinct, designed identity. Although recognised as a cliched soft structure - one tied to the interface of newspapers - the column is powerful and flexible enough to be imported into the n-space model. This could be regarded as being a negative or retrograde step; the cliche is widely understood to be something predictable and over-used, and, some might say, inherently invalid. The design cliche in the n-space prototype, however, is regarded as an important and reassuring tool of support for the user.

Familiar through repeated use, the cliche - in this case the column - supplies a sense of stability, trustworthiness and, importantly, continuity in terms of user recognition. The n-space model relies upon user knowledge of the column's role and function in older news spaces: as fixed and immobile due to the conceptual hard structure of the page. Developing this function, the column in the n-space is untied from the fixity of print and redefined as a flexible, dynamic organisational structure. This redefinition is outlined later in this chapter.

5.5.7 Column as currency

The column can be regarded as the structural unit of currency in the communication of printed news. In general, a news item is measured in terms of its column length; this measurement signalling its news-value and relative importance to both news-workers or journalists (whose work it is being measured to this scale) and to news-readers or consumers (who respond to the cues of communication design and follow the hierarchies and guidelines laid out before them). Surface area directly corresponds to editorial value or worth.

Also, the term 'column' has the connotation of ownership of specific information, and is used as a measurement of status; of being above the purely bylined journalist. To be able to attain the status of having/writing a column measures the journalist's progress and achievement within the profession and communicates a sense of personality, personal opinion and personalisation of the copy, rather than the objective model most widely understood to qualify as 'news'.

In the n-space model, use of the column as key coherent, textual unit in the communication of electronic news is continued and its 'value' is increased; it is recognised both as the fundamental structure for organising and visualising body copy, and also as a significant structural unit in itself. The column is the means by which an item's information is communicated, the pinnacle in the pyramidal structure or reading path of the user in the n-space; it becomes the key element for focussed hypertextual analysis in the reader's enquiry.

5.5.8 Adjacency and juxtaposition

By virtue of being placed alongside one another, columned text creates a sense or quality of connection, of two or more elements being connected to each other. As has been discussed in an earlier chapter, the spatial arrangement of elements in the n-space model is one that constantly communicates certain qualities regarding informational hierarchies, priority, potential or context: meaning and meaning-potential is ever present and is a continuous experience of using the prototype.

Certain spatial relationships - along the x, y or z axes - form patterns of thematic or conceptual linkage. On a micro level, the placement or positioning of elements or soft structures such as the column on the n-space's conceptual hard structure must therefore continue this practice of being a continuous process of link- or meaning-communication.

Newspaper design and communication takes for granted the reader's understanding of the spatial relationship and reading pattern and pathways through columned text. The route through this linear-interrupted firm structure - column alongside column - is inherent in the medium and quickly absorbed by the reader where it's function as a design cliche is assured.

Certain examples can be considered which attempt to redefine this cliche; specifically in their undertaking to break the traditional pattern of reading columned text and the resultant effect on informational hierarchies and the explicit signalling of non-linear connectivity and connexity.

'Glas' (1986) by Jacques Derrida is just such an attempt at redefining a cliched soft structure. The page presents two texts; two columns - one a commentary on Jean Genet, the other passages from Hegel with an additional commentary - alongside each other, on the same hard structure yet seemingly on separate conceptual hard structures.

> "In Glas Derrida lays down a textual space and challenges his reader to find a path through it...(t)here is no linear argument that spans the columns, yet the reader's eye is drawn across, down and around the page looking for visual and verbal connections. And the connections seem to be there..." (Bolter 1991, p. 116)

Here Bolter could be describing the actions of electronic reading with its pre-eminence of connection and of movement; Glas can be seen though its recognition and use of the column as its main 'architectural configuration' to be preempting the processes involved in hypertext and the flexibility and inherent potential for communications rooted in the column as key, elementary soft structure. In his discussion of Glas' undermining of the book's traditional format and of its roots in the glossed, columnar structures of fifteenth century Bibles, Andrew J. McKenna (1978) comments that

> "...the patent irony of the dual columns in Glas is that they do not conform to their monumental archetype. They are themselves set in different type. Beginning and ending as remnants, they do not support any over-arching structure, philosophical, literary-critical or other, but only resonate with each other." (p. 296)

These static, paper-based soft structures are seemingly attempting to break free from the limitations of the page. By doing so, they echo a great deal of the reconfiguration of the column outlined later in this chapter: their visual identity - their typographical design - attempts to signal something of their content, to signal their difference; they sit awkwardly as remnants or fragments perhaps of or from other texts. The columns themselves are self-referential; invoking nothing other than each other. This aspect of being isolated or removed from their wider contexts has parallels with the 'low-level' focus of reading outlined in the previous chapter.

The cut-up experiments of William Burroughs and Bryon Gysin made the explicit connection between breaking traditional reading patterns and the text itself revealing certain non-linear connexions between textual elements. By reconfiguring the text through the process of cutting it up and rearranging it into a new reading/writing space new meanings and reading pathways emerged.

One practice Burroughs recommended which breaks our patterns of reading printed news was that of reading horizontally, across printed news' columned text rather than vertically or down the column. This action, according to Burroughs revealed and communicated an inherent truth contained within that printed text. By deliberately working against the 'rules' of reading printed news (if such things could be said to exist), Burroughs was advocating a non-linear, fragmentary, hypertextual reading experience and acknowledging the role of the column in this process.

5.5.9 Dynamic columns

The n-space model advocates the use of the on-screen column for the communication of the body copy of selected news items. The user moves through a specific pattern or along a pathway when reading in the prototype: having previewed connection and then content through the use of the roll-over, and fixed an item for mid-level focus, the user - by double-clicking - is presented with the content of that item (see 5.6). This content is presented in the form of a series of columns.

As a general preference, the n-space model divides the screen - at the low-level of focus or reading - into a five column grid structure. (fig 5.5.1) Such a grid is flexible enough to allow new columns to be based upon variations of the original grid. For instance, in this illustration, three columns are laid out across the width of two 'original' ones. (fig. 5.5.2) Here, the selected news item is centred and the first column of the item's text is presented in the central column of the grid. (fig. 5.5.3)

From this point in the n-space, the user is able to preview and construct hyperlinks in the text. This column-driven process for reading and communicating news allows the user to follow pathways between and underneath news items - via the text of each item - rather than from headline to headline. Therefore, a finer sense of hyperlink is constructed as connections are made between elements within each column rather than from, for instance, headline to headline.

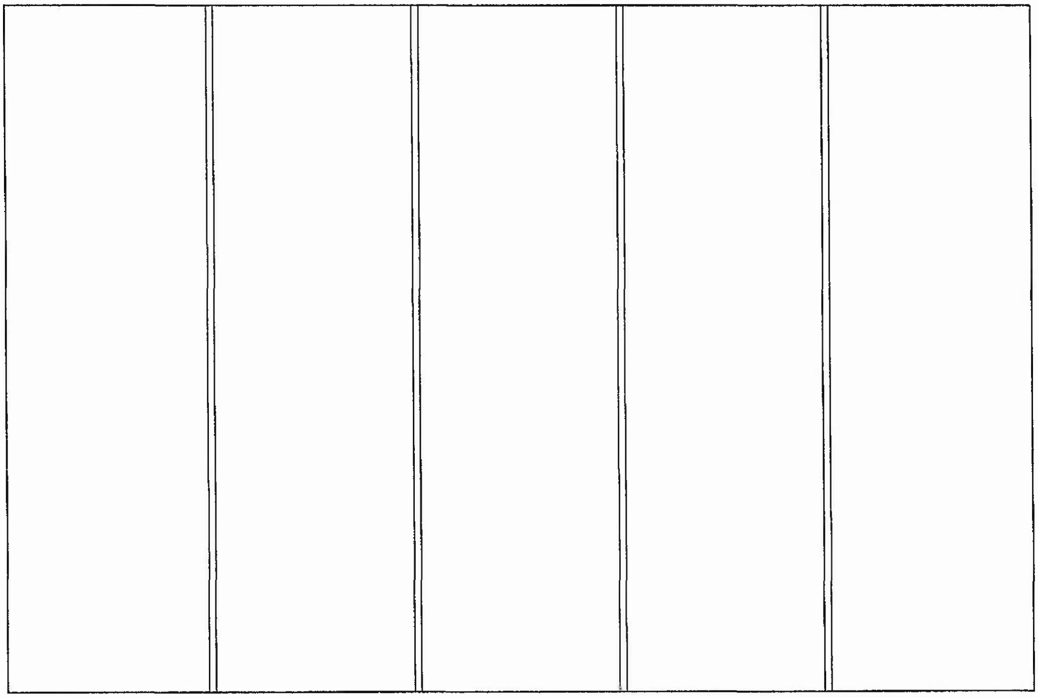

fig. 5.5.1: the n-space model five column grid structure

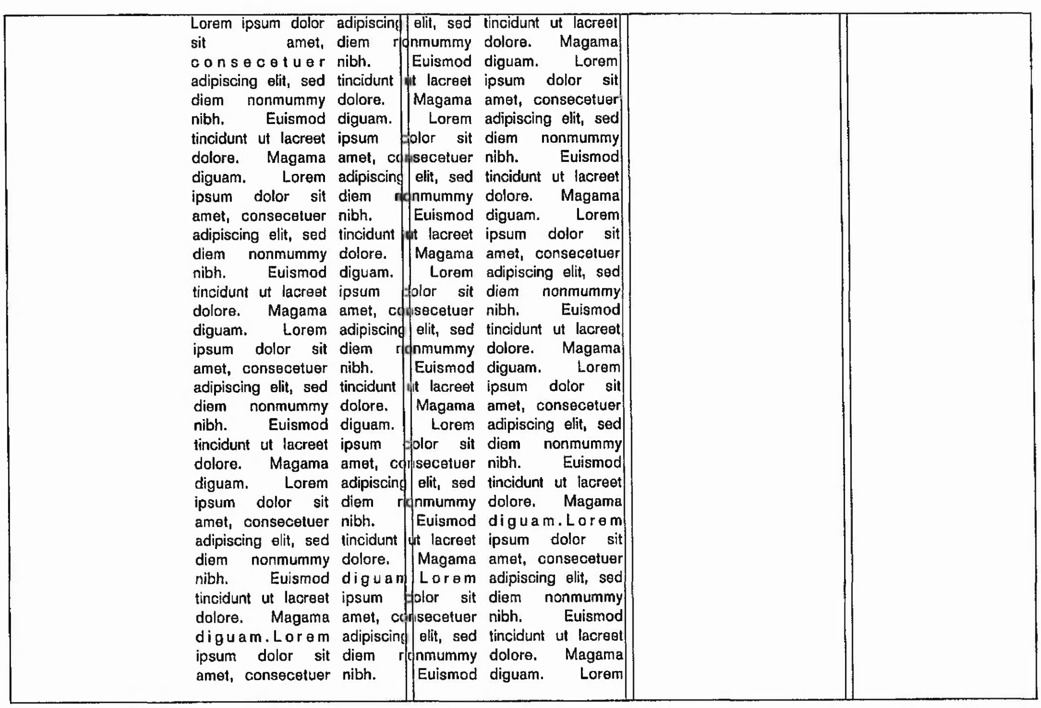

fig. 5.5.2: three columns laid across two 'original' columns

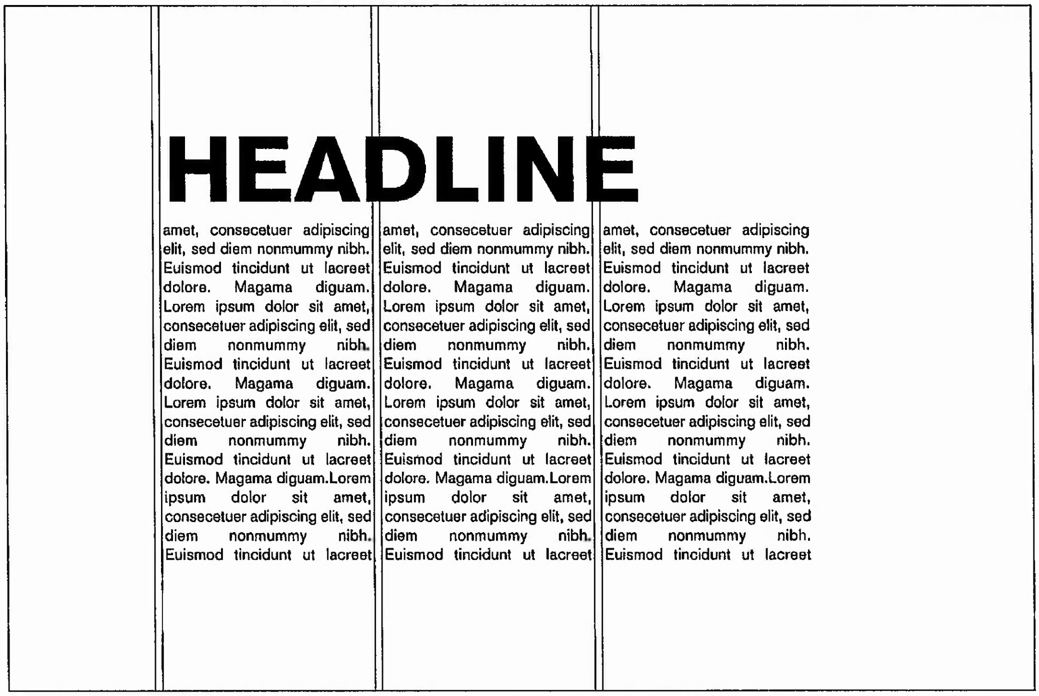

fig. 5.5.3: a news item whose first column of text occupies the central column in the grid

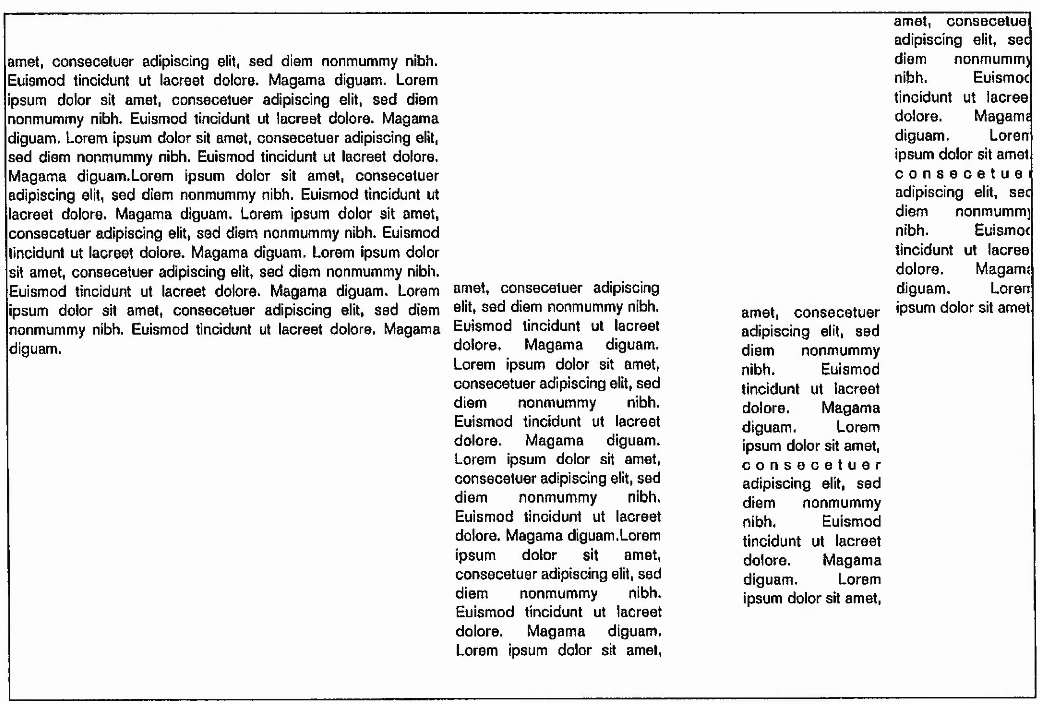

fig. 5.5.4: a range of columns are presented to the user, who is browsing linked items at a low-level. The central column is that currently selected

5.5.10 Dynamic column width

The necessity to divide the page or the screen into vertical divisions is acknowledged by Evans (1973): "...the principle...(of)...legibility dictates some form of setting so very much narrower than the full width of the tabloid or broadsheet news sheet that the page has to be divided vertically into a series of columns." (p. 68) This necessity is continued in the n-space prototype where significant quantities of text are divided into discrete vertical units which are presented on the screen. The width of these units (or columns) is determined by the width of the user's screen, divisible by 5. One example column width for a user with a 640 x 480 pixel display (roughly comparable to a 14 inch screen) is 128 pixels. In similarity to printed news, there is a point at which a column can be no smaller in terms of its width, and in the n-space prototype, this point is generally regarded as one quarter of the original column width.

The notion of dynamic column widths in the n-space model refers specifically to the widths of specific columns varying depending on certain factors. For instance, in this example a central or primary column - that which is selected for reading - has been surrounded by a number of linked columns. These linked columns are positioned around the central item and certain connections are visualised. Although the use of the five-column grid has been acknowledged in the n-space model, the columns in this example are of varying width giving their pattern a dynamic quality in the number of column widths presented.

In the model the width of a linked item's column denotes certain qualities to that linked item. If an item's columns width is narrower than that of the central column (in the example discussed above: 128 pixels), those items are more closely related to the central item in terms of their content. Columns wider than the central item are related more specifically in terms of providing that item with context. As a general 'rule-of-thumb' this system allows the user to immediately classify certain linked columns in the n-space model in terms of whether they are linked either directly by content or context.

Column widths in the n-space prototype change when certain decisions are made by the user. For instance, when a linked item - that is, one other than the central or primary item - is selected, that item automatically becomes the new centre of attention (figs. 5.5.4 - 5.5.5). It moves into the central column, to the centre of the n-space's conceptual hard structure. If this new central item was one previously linked to the older central item in terms of context then its width will reduce to fill that of the central column (fig. 5.5.6). Likewise, an item's column width will expand to fill the central item space if its original width - linked to relative content connexity - was narrower (fig. 5.5.7).

The selection of a linked column as the new central item has repercussions on its linked items. In this example, an item is selected and the n-space responds by moving it to the centre of the screen. Its width is increased to fill that of the central column. With this rearrangement of elements in the n-space, those items around the older central item are re-appraised for their relevance - both in terms of content and context - to the new primary news item. Old or irrelevant items are removed from the space and new ones introduced. Of those remaining items, some have their column width either increased or decreased reflecting their new

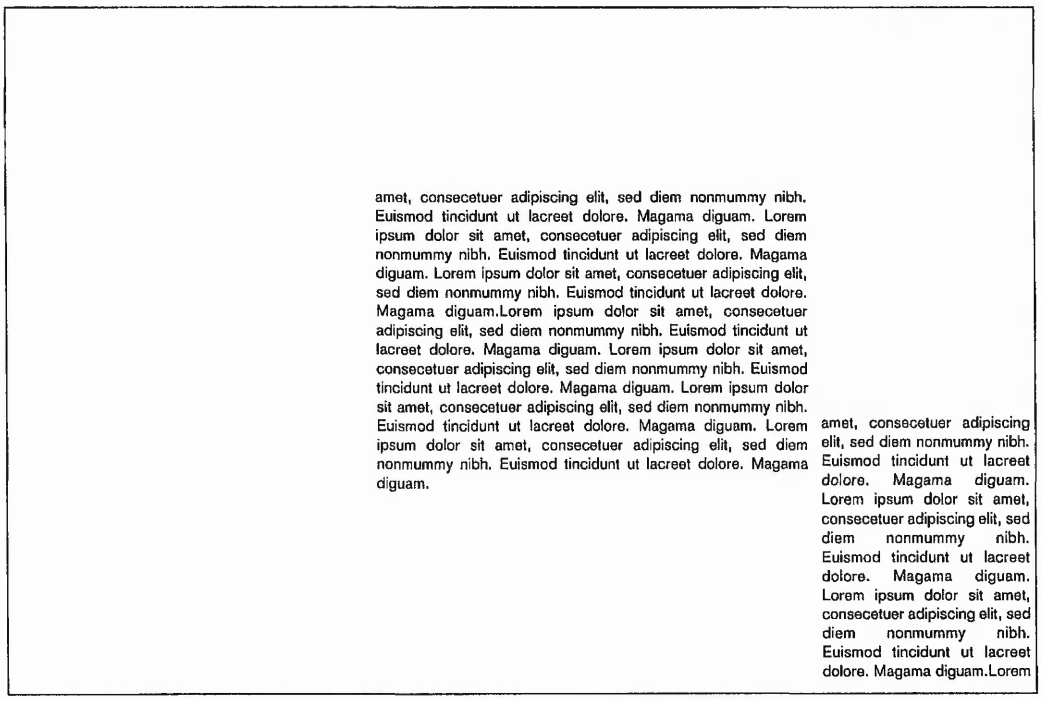

fig. 5.5.5: upon selection as the new primary column, the wider column is automatically centred on the n-space's conceptual hard structure

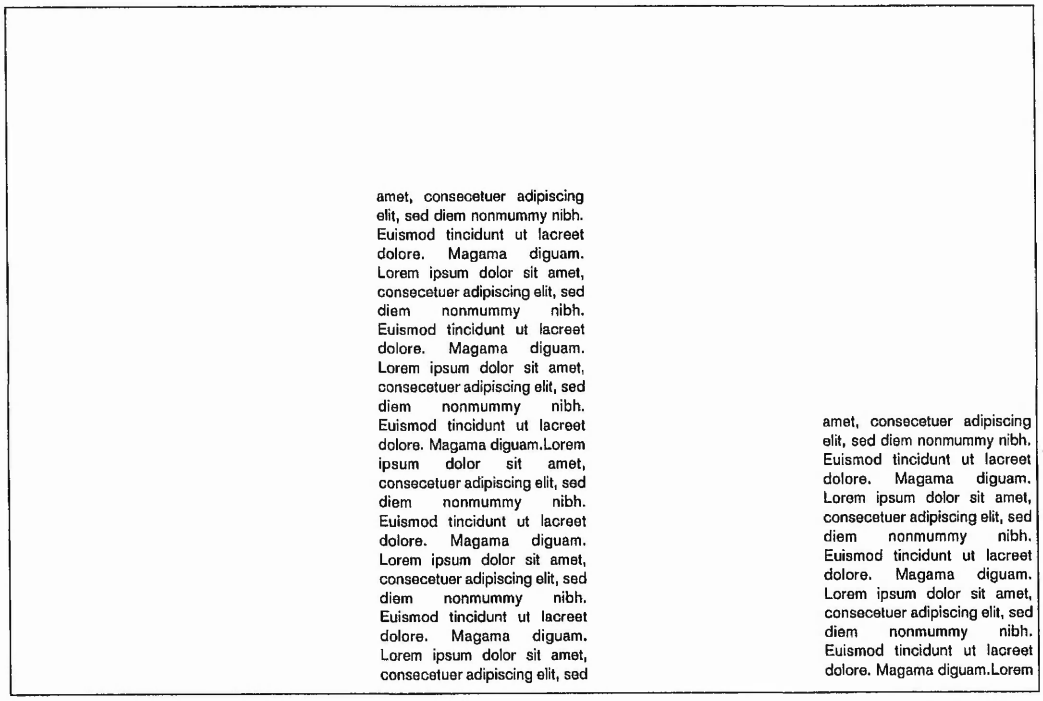

fig. 5.5.6: once centred, the selected column's width is reduced to occupy the central column

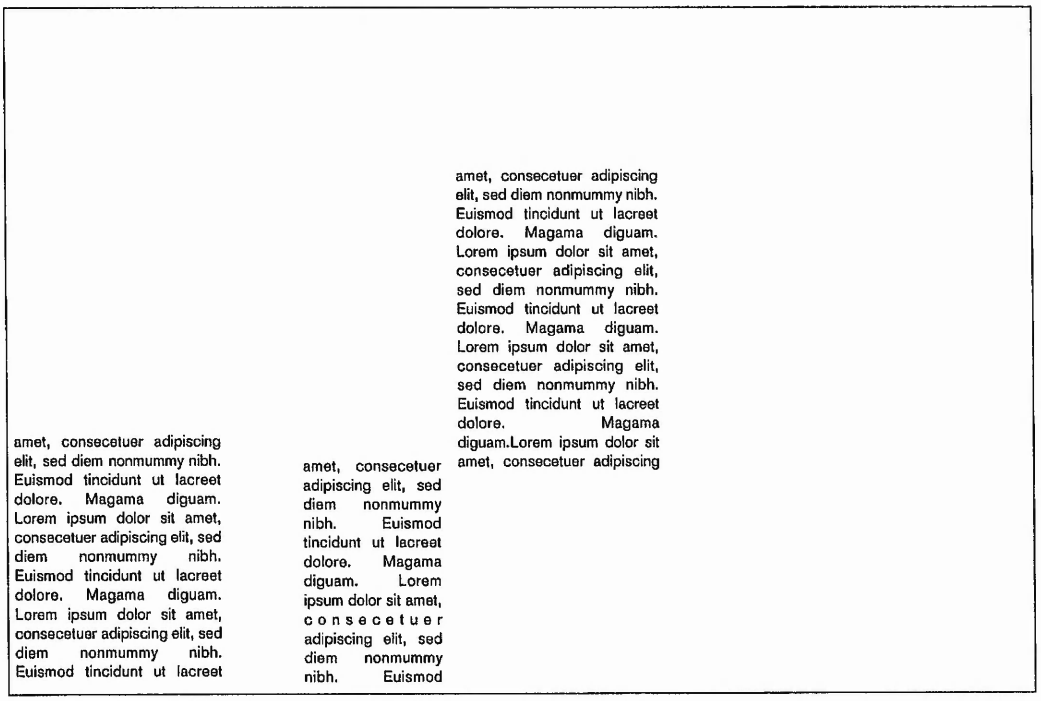

fig. 5.5.7: a narrower column, selected from fig. 5.5.4, is centred upon the conceptual hard structure and its column width expands to occupy the central column

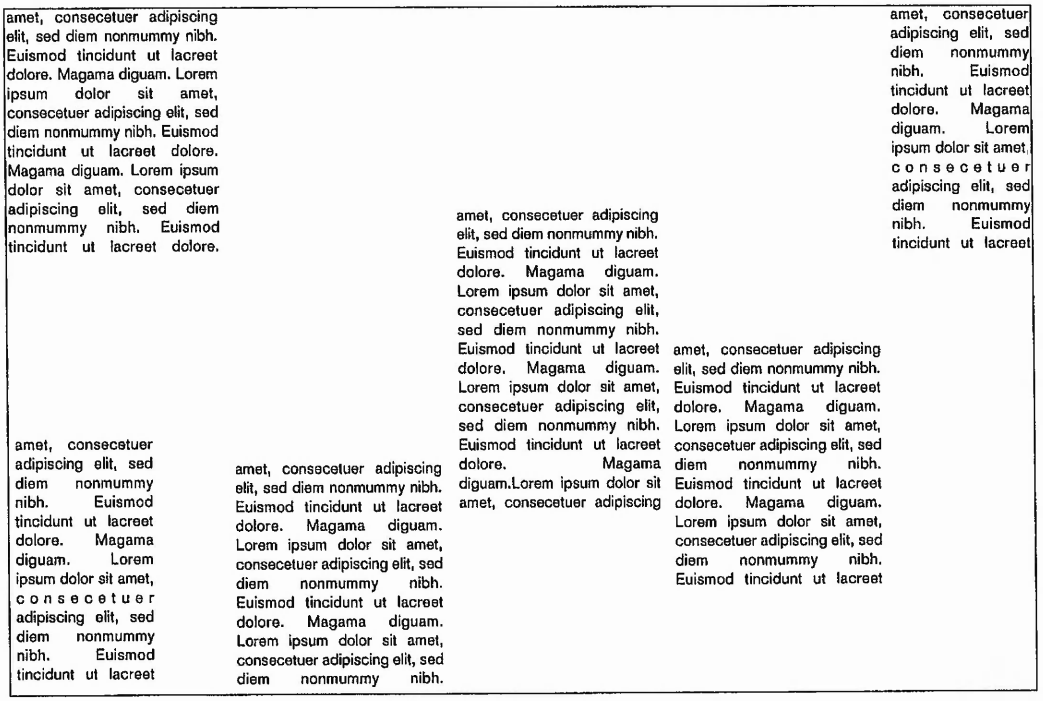

fig. 5.5.8: with the selected column recentred, new columns are introduced to the space and older columns have their widths adjusted, responding to hierarchical/contextual changes

contextual or content-relations. In this example, certain items are moved around the central item to reflect their changing relationship to it (fig. 5.5.8).

5.5.10.1 Dynamic column height

Column height is defined by a news signal's physical limitations. In printed news, the format - either tabloid or broadsheet - determines the page's height and therefore the height of any soft structure used upon it. In the n-space model, screen or display size fixes an optimum height for the columns used upon it. The fragmented and fragmentary nature of the n-space's conceptual hard structure - that of a seemingly limitless space or environment - allows the column height for news items to both be larger than the screen's physical size and to shift or change according to specific circumstances.

A central or primary item - that which is regarded by the prototype as the user's centre of attention - is always run across a number of columns. As mentioned earlier in this text, the first column is positioned in the central column on the hard structure. The remainder of the copy of this item is then flowed into columns to the right of this one. The height of these columns is fixed by that first column; its height by its original height when selected by the user (figs. 5.5.9 - 5.5.10).

The height of any particular column - as illustrated - communicates its relative importance and news-value, referring specifically to its relative position in the scale or hierarchy of news values. For instance in this illustration an item is surrounded by linked columns, each of differing height. The range of column heights presented in this example demonstrates and visualises for the user the relative priority of each linked item since those soft structures more traditionally relied upon or expected are missing. News-value can therefore be communicated without recourse to more than one on-screen element.

Due to the limitations of the hard structure of the screen, the n-space prototype ensures that columns presented on the screen are no bigger than the screen itself. The n-space's conceptual hard structure allows the user the facility to browse the space and therefore fragments of soft structures, of elements or items will always project onto the screen.

However, when an item is selected it becomes temporarily fixed upon the hard structure and after being centred, linked columns appear in the space. The height of any of these columns is no bigger than the screen's physical height. This column height - a column's height visualised as a linked element - is referred to as 'screen height'. Being no bigger than the screen, the user is therefore able to read any information presented within a column without having to 'push' the screen itself up or down to ensure the item's column can be seen in its entirety.

Since a linked column may be a fragment of another item, it is only partially displayed; the information presented in the column is of direct relevance to the central item. The linked item may therefore be considerably larger than the excerpt presented in the column itself. This length - of the item as a whole - is termed the 'column height'. It is possible for the user to see the column length (or news item or story) by selecting it and reorienting the space around it. If the

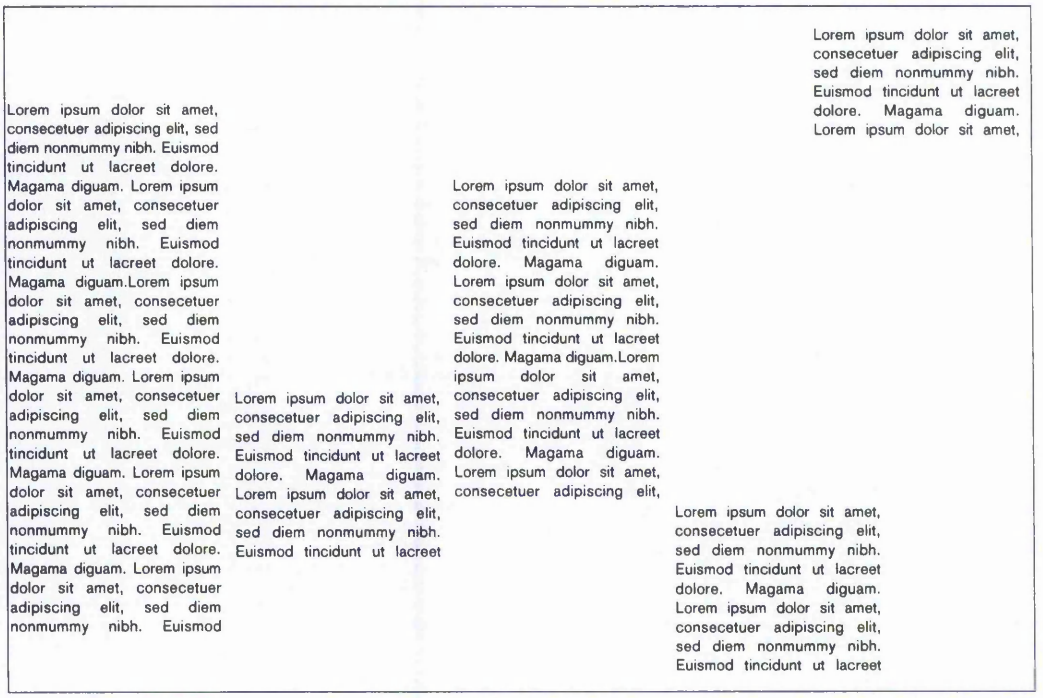

fig. 5.5.9: a series of thematically linked columns are presented to the n-space reader/user

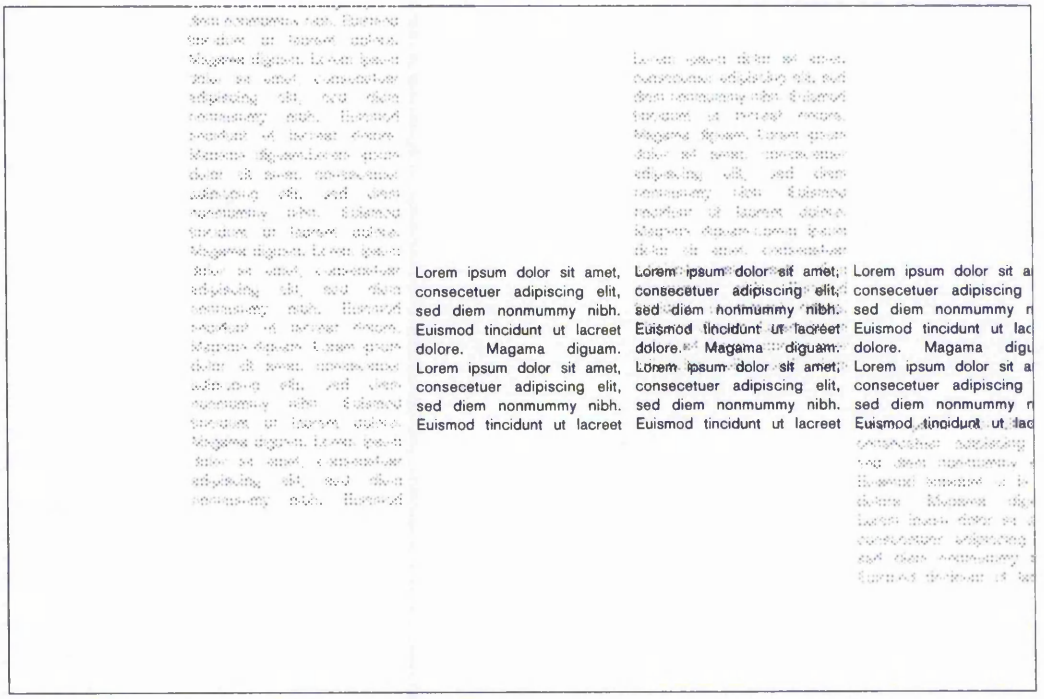

fig. 5.5.10: once selected - double-clicked - this column is centred and its full body copy is presented to the user alongside it in columns of equal height.

user wanted to preview the item, the column length can be presented in that one column by scrolling the item's text through its screen height (fig. 5.5.11).

It may be possible that the user could be able to adjust the column height and width of any column presented in the n-space. This possibility will be explored in the project's implementation phase.

5.5.11 Dynamic columnar structures

With a central item surrounded by a number of columns representing linked news items, the user is presented with a sophisticated columnar structure. Like the firm structure of an individual news item, the n-space visualises related items in the same space as the item being linked to.

Using the principles of dynamic column width and height as outlined above, this columnar structure communicates to the user a multiplicity of forms of link potential. For instance, the user can be presented with a series of linked news items around a selected central column. Each of these columns communicates a number of issues or aspects about itself, as outlined earlier in this text; certain columns are taller or shorter than others, communicating their hierarchical position in terms of news-value.

As can be seen, column width signals relevance to the central item in terms of either content or context; selection of one linked columns can be seen to effect this columnar structure. Movement of the columns has been illustrated - with some disappearing from the space altogether and others repositioning themselves around the new central item. Further, as these items move around the central column, some are increased in terms of their width with others decreased as their relationship to this news item is redefined.

The n-space therefore illustrates and recognises that the column itself can be considered a dynamic soft structure. When columns representing connected news item are visualised on the n-space's hard structure, these groups or arrangements of soft structures are themselves dynamic structures. The n-space model is a topography of almost constant movement, the notion of dynamic columnar structures mirrors this movement onto the low-level of the user's reading pathway.

5.5.11.1 Nested columns

As Cavalier and Chandhok (1991) comment, the use of columns as means of directly signalling hyperlinks and as a space for seamless contextual connexion "...provides an inherent commenting space intended as the electronic equivalent of the marginal annotation in medieval annotated texts...(a)s an interface for cross-referencing and placing comments in their context." (p. 187)

Glossing, or marginal annotation, as illustrated by Cavalier and Chandhok in their reference to and analysis of the glossed bible combines both primary and secondary - linked - texts in the

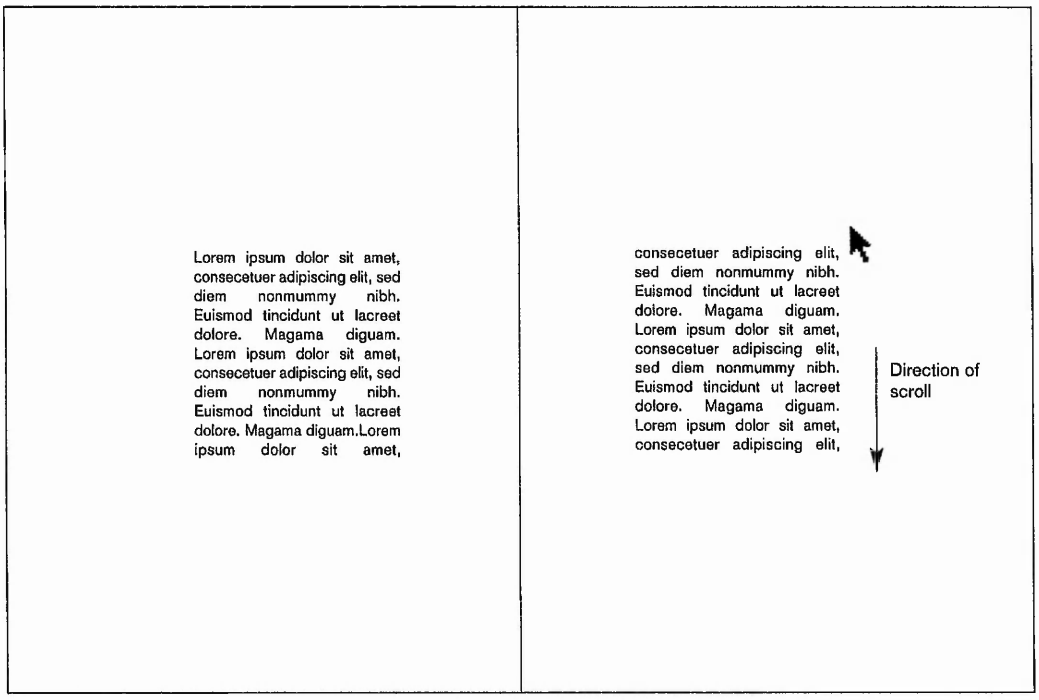

fig. 5.5.11: Left: a fragment of a column is presented to the n-space reader for preview. Right: by rolling-over the top of the column, the user can scroll through the news item

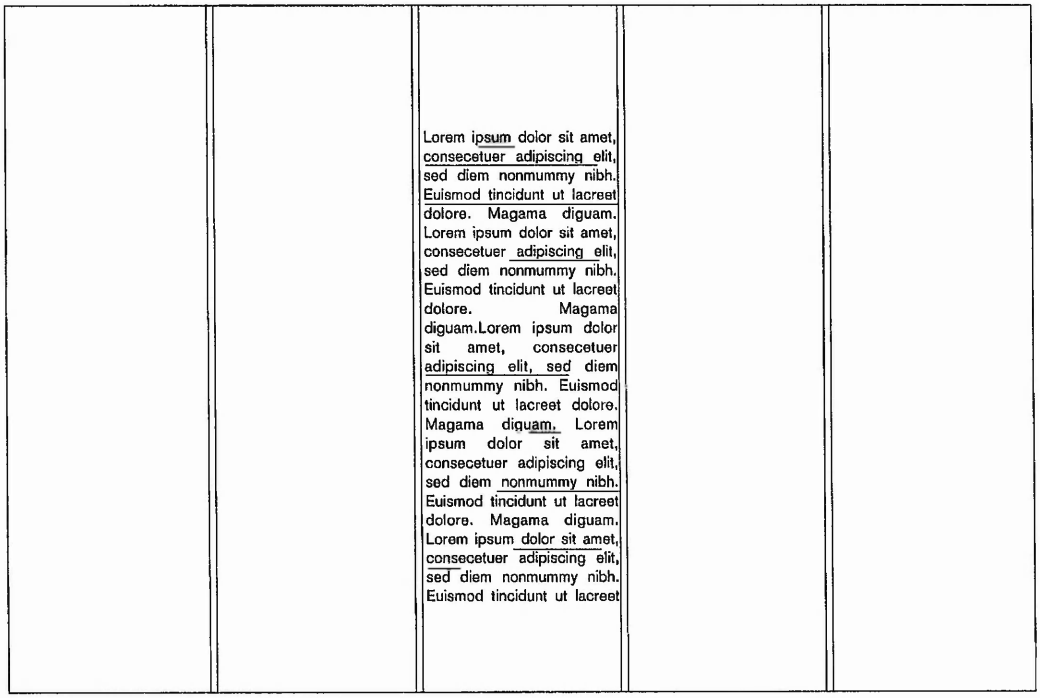

fig. 5.5.12: the body copy of the current news item is presented, with the central column being the current selected element. Underscores signify hypertextual exit points

same 'commenting space'. Similar examples of text and comment/context can be seen in Elliman's (1998) discussion of the Talmud (p. 61); Lupton and Miller's (1999) study of "...the intrusion of visual form into verbal content, the invasion of 'ideas' by graphic marks, gaps, and differences..." (p. 17) and Tufte's (1990) example of the "...26-day narrative of one person passing through an intensive care unit..." where a central slab of technical information is flanked by commentary at specific points along the account. "The design is transparent to the disturbing information, as a layered polyphony of voices...weave together to trace out days, hours, minutes, dollars." (p. 56)

In the n-space model, the column is the primary textual soft structure through which information is presented to the user. As has been outlined, the column is a dynamic element whose cliched uses are extended when presented electronically. Developing Cavalier and Chandhok's use of the column in aligning link and target(s) in electronic writing, the n-space makes use of so-called nests or clusters of columns to illustrate and visualise hypertextual structures. The commenting space of a news item radiates from its selected element; in this case the bodycopy of a particular story. Links are layered in parallel from this central point.

For instance, in fig. 5.5.12, the body copy of a news item is presented to the user; with the central column being the current selected element (reflecting the reader's centre of attention). A number of links are shown in the text and are recognised through the use of the underscore to signal hypertext 'exit point'. Upon selection, rather than being transported across the n-space's conceptual hard structure to the location of the linked item, the user is presented with that item in the same space (fig. 5.5.13).

Further, as opposed to presenting the 'linked-to' item in its entirety, the model contextualises the primary text by only visualising a relevant selection: the column in which the link is fixed. By doing this, the reader/user is presented with contextual excerpt or reference as opposed to the full text of a linked item. If further investigation is necessary and desired, the reader can select the excerpt and make it the new centre of attention and the n-space's reading path (fig. 5.5.14).

By moving through the central column/element - linking-from its hypertext exits - a cluster of linked-to items surrounds the column, each one itself a column (or fragment of a column). Their difference is signalled to the reader by the use of visible links; extending from the central element to its satellites and locating specifically the point of linkage.

The use of nested columns in the n-space prototype allows the reader to build up a sophisticated, layered structure or bricolage of items and their contextual hypertextual links. These are visualised in direct relationship to one another, hopefully allowing simultaneous analysis and understanding of the news item currently being processed (fig. 5.5.15).

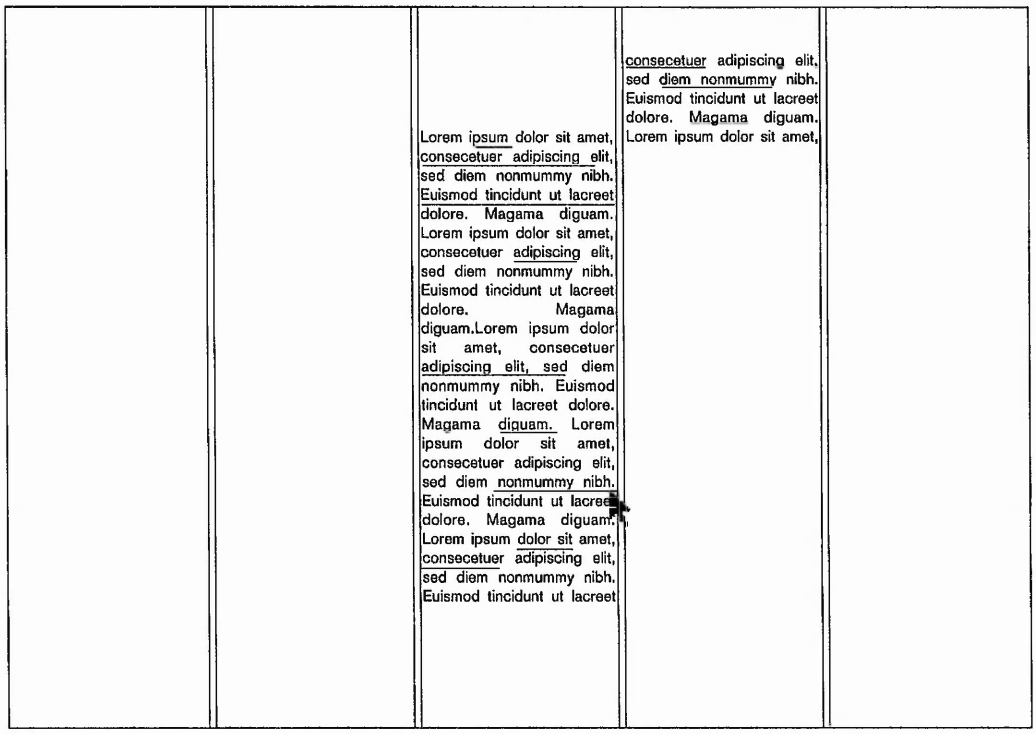

fig. 5.5.13: upon selection - single-clicking - of a highlighted link, the reader is presented with a contextual reference or excerpt as opposed to the full text of the linked item.

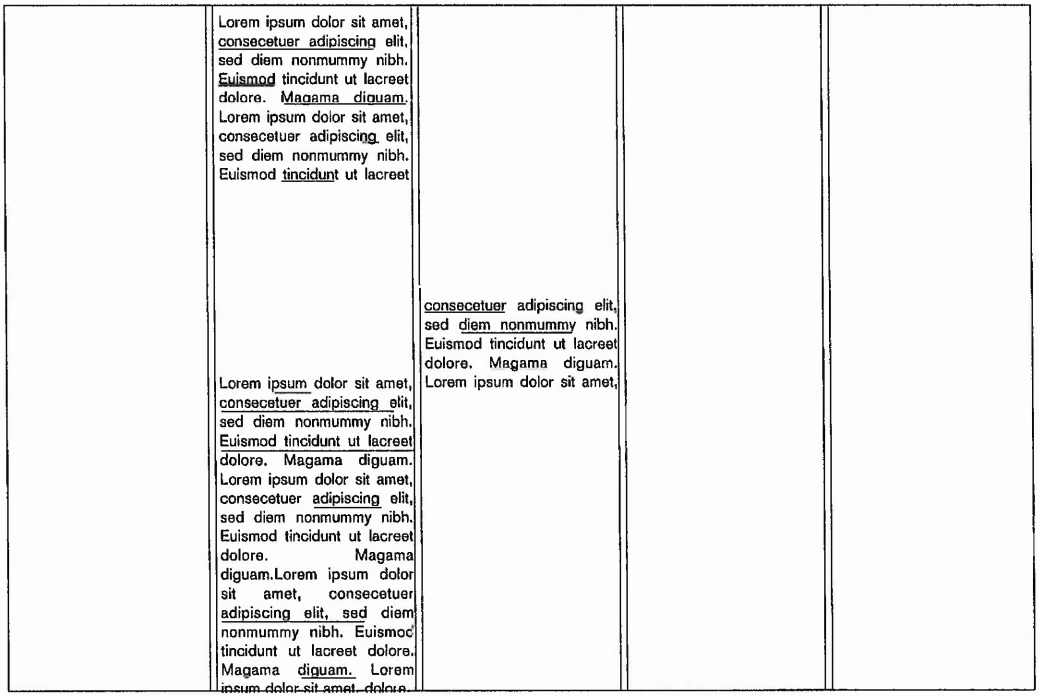

fig. 5.5.14: upon selection of linked reference from the new column, it then is reoriented and centred with its referent column appearing in the space

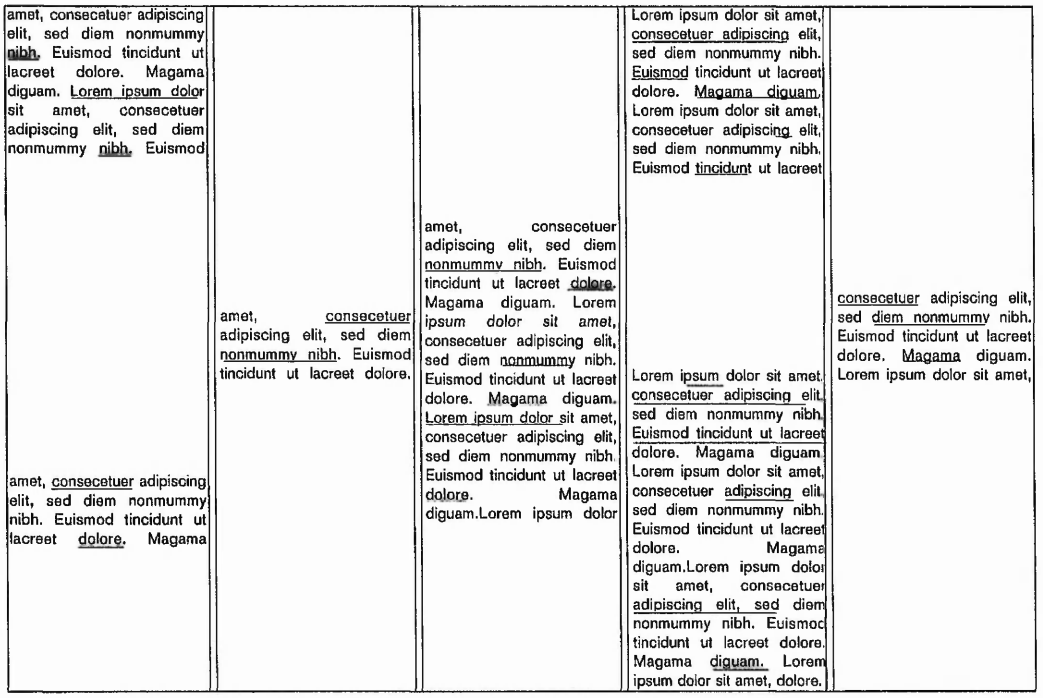

fig. 5.5.15: this process can continue - with the user reading through fragments of news items - until a nest of structured columns are visualised, allowing simultaneous analysis

5.5.12 Summary

Electronic columns are recognised as vital communicative structures within the n-space model. Their development as dynamic, flexible elements - in terms of width, height, location and context and hierarchy - founded upon notions of adjacency and juxtaposition marks them as fundamental soft structure for economic and coherent electronic communication.

5.6 Rolling-over and clicking

5.6.1 Introduction

This chapter is primarily concerned with issues involved in the processes of interaction with - and processing of - information presented in the n-space model. In the prototype electronic n-space, two general modes of human-computer interaction take place: rolling-over and clicking. Each of these will be outlined, described and in the case of the discussion of 'clicking' expanded and developed.

These processes for electronic reading in the prototype aim to mirror certain qualities largely associated with other news signals, in particular with reading printed news. Together with this implicit understanding, the practice of 'rolling-over and clicking' introduces and explores the metaphor of the n-space as a 'seamless space'; that is, one which ignores 'traditional' notions or qualities of or associated with the design of the Graphical-User Interface, opting for a 'non-interface interaction design'. The n-space model presents its users with a button-free environment. Rather than being icon-driven, the space is item-driven.

This chapter outlines the processes involved in interaction using the methods of 'rolling-over and clicking'; the further uses of design cliches from earlier news signals; the cursor as on-screen avatar; the act of selection and its consequences; the notion of moving or shifting informational centres mirroring the user's centre of attention and explores the stability of the news-flow.

5.6.2 Electronic news, and its navigation

5.6.2.1 Rewiring cliched navigational structures

The n-space prototype - as has been explored and outlined - is a seemingly boundless environment; lacking various noted restrictions or limits (topographical and/or informational), and in principle embraces a widening and redefinition of our linguistic understanding of 'news'. An outline of new navigational structures is important in order that this model's freedom does not confuse or bewilder the news-user.

In keeping with the acknowledgement within this text that the design cliche is perhaps a negative misjudgment of a useful, widely understood communicative tool, a backwards glance may therefore be necessary; one which re-evaluates older systems for information navigation/management, rehabilitating them for re-entry to their new space. Print offers the prototype a significant structure and model for navigation and processing information in the n-space.

All news signals are navigated through the use of specific structuring of content. As the analysis of printed news outlined, three soft structures are used are fundamental in this process communication: headline, byline and body copy. If these soft structures are considered as a form of navigable narrative or content - presenting structured levels of information - a thread through the news item can be traced. Following this thread - from headline (entry-point or level) to body (primary or main level of information), though byline and perhaps other soft structures, the reader/user is presented with the item in full. Any one of these levels can be thought of as exit points, that is, the reader/user is able to leave the item in order to view another, or leave the signal (fig. 5.6.1).

Each informational level signals different hierarchies of presentation and navigation. As the reader moves along this pathway, she moves through an inverted pyramid; from broad-based content (the headline, offering a general 'lead' into the item) towards the pyramid's point (the copy, specific focused content). This navigational structure is used in the n-space model as the fundamental mode of user-interaction.

5.6.2.2 The cursor as on-screen avatar

Put simply, the n-space prototype is negotiated by the actions of the computer-user, sat at his or her terminal, moving an on-screen avatar or virtual self in the form of a cursor, cross-hair or arrow - through the use of mouse, keyboard, trackpad, tablet or stylus - whose movement corresponds to the reader's actions, reflecting or mirroring the user's gaze or centre of attention.

This electronic representation is an active participant in the actions taking place in the n-space. As has been previously outlined, the n-space prototype is capable of passive or active modes; passive when simply viewed or allowed to play itself out in a stable, linear fashion; active when the reader/user disturbs and breaks this sequence or news-flow and plays a part in the actions of the space as it responds to enquiries and activity.

The n-space reacts to the user's presence; moving or adjusting other elements within its environment. This involvement - through the bustling presence of a representative - itself reacts to the perpetual shimmer of the n-space model in action; following its own, pre-set agenda, the n-space continually receives and processes the news-flow. New items are inserted and this introduction - as has been discussed - results in movement and activity around the reader/user.

5.6.2.3 The predominance of connection and consequence

The use of electronic information and communication technology systems such as the World Wide Web introduces or makes explicit to the electronic reader the idea of consequences due to connection, selection and interaction. The mosaic interface of a page of printed news communicates its functional interactivity to the reader; this non-sequential, fragmented presentation of numerous series of narratives prefaces the predominance of active selection on the Web and in the n-space model.

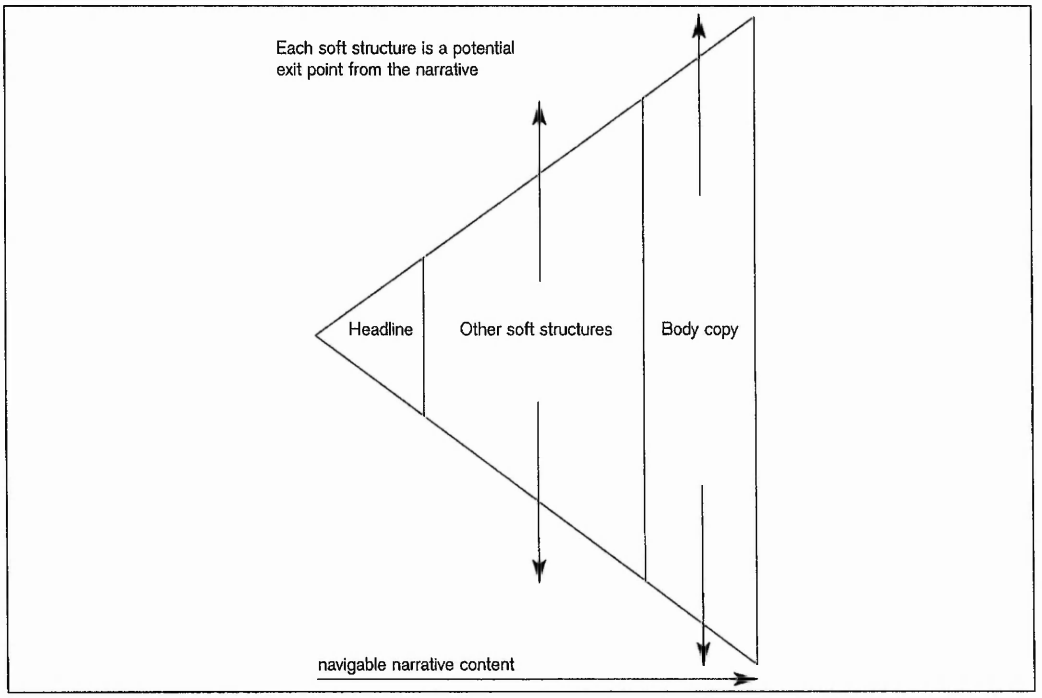

fig. 5.6.1: navigational structure of all content in the n-space model

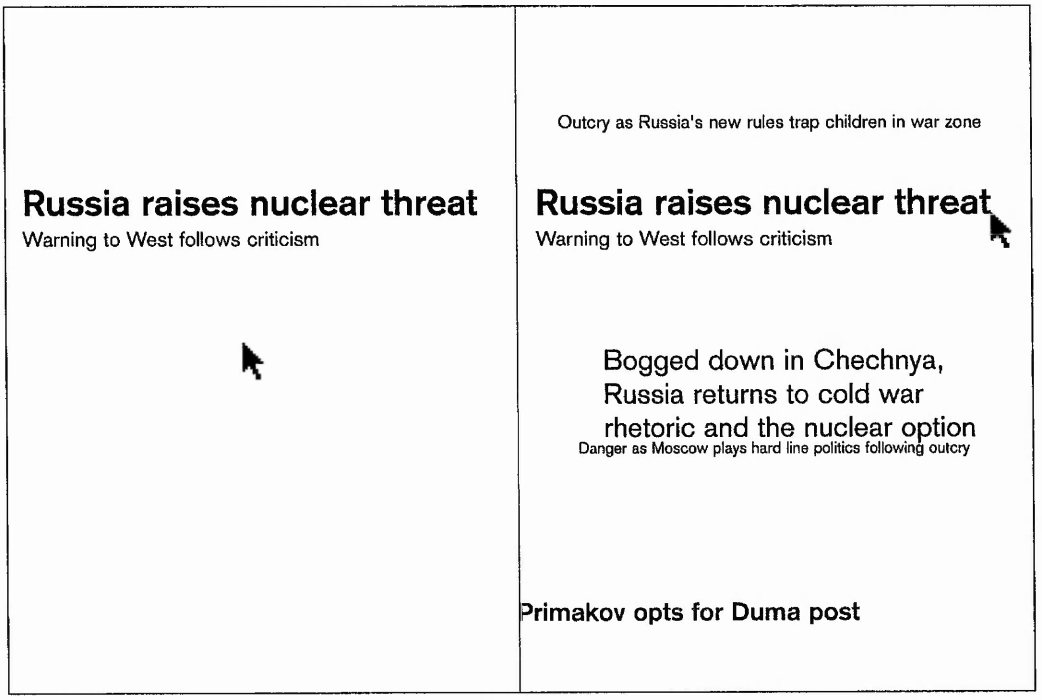

fig. 5.6 2: preview of potential linked items when lead item is rolled-over

In terms of its facility for interaction, the n-space prototype follows Ted Nelson's Xanadu system, that - fundamentally - every element within the n-space is active; everything has the potential to be 'clicked' and is a connection - or series of connections - to everything else. Following this simplistic outline, this act of selection must therefore release a series of consequences into the news-flow. One consequence might be the movement of a specific item or items to another point in the space; items may be removed from the space altogether or older items reintroduced; or the reader/use may be moved to another zone of the space.

Connection and consequence are fundamental to the n-space prototype for any form of navigation and interaction. As previously mentioned, effective and comfortable reader-orientation in such a new environment is important, hence the use of the design cliche.

5.6.3 N-space as a seamless space

5.6.3. 1 'Imagining the world through spatial organisation'

As Johnson (1997) outlines, the interface is a process or system or mechanism for giving form to an incredibly complex information space. This space was at one time rooted in the printed page, or in architecture or indeed in other forms of public life. However, we primarily understand the notion of an interface to be centred around the electronic communication of information, a medium perhaps most suited to its basis of symbolic organisation and visualisation. "The computer is a symbolic system, one that traffics in representations or signs..." (p. 15) Relying primarily on pictorial metaphor whilst making use of spatial organisation, the Graphical User-Interface attempts to locate the computer-user in a familiar space - most often that of an office with its associated paraphernalia - through which the user is able to understand, manipulate and form immediate relationships with their on-screen data.

Rather than the two-dimensional surface design of traditional printed and electronic interfaces, the n-space model owes more to recognised spatial organisation in three-dimensions. This method of 'making infinity imaginable' - as Johnson describes the interface's role and function - has certain historical precedents: for instance, the Gothic cathedral as symbolic spiritual worship set in stone (Johnson 1997, p. 42-43; Bolter 1991, p. 1); the interiorised, mnemonic topographical memory palaces of Greek and Roman orators (Bolter 1991, p. 56; Ong 1982, p. 130); and the Spatial Data Management System outlined in Negroponte (1995, pp. 99-101).

More recently - in 1998 - the Smithsonian Institute website allowed browsers to visit its Revealing Things exhibition - an online resource 'using common, everyday objects to tell stories about people, their cultures, and the meanings they associate with their possessions'. Produced in collaboration with American interface design group Plumb Design, this exhibition utilised the spatial metaphor and a system for organisation and visualisation similar to that used in the n-space model. Plumb Design's 'ThinkMap' software has allowed them to visualise a form of functioning non-interface interaction design very close to the n-space prototype's intentions (fig. 5.6.14).

5.6. 3. 2 Anti-interface: removing iconography

The picture-writing associated most closely with graphical user interface design - the icon - is abandoned in the n-space prototype. By eschewing traditional notions of the interface as a controlling technology through the use of specific visual metaphors - to control selection and connection and consequence - the model again refers to older interfaces: the newspaper page as transparent technology. In the case of printed news, its hard structure - the page - and the information presented upon it can be seen to almost structure themselves. This implicit - almost to the point of being invisible - interface (and interaction) design communicates to the reader notions and information concerning priority and its associated hierarchies and qualities of information through its spatial organisation upon its hard structure.

Likewise, the n-space model communicates a seamlessness in its presentation of news items. In a sense, although the designer's importance and role in the communication of news is recognised, the items can be seen to be self-assembling; in one sense the information designs itself, in reaction to its content and context; in relation to its (pre-set) priorities amongst other items at a specific point in the n-space.

Similarly, buttons - that is icons whose function it is to signal to the user that they result in a specific consequence when selected - are also not employed in the n-space prototype. Rather - as has been outlined - the predominance of connection suggests that all elements in the n-space become buttons. And instead of explicitly signalling this state, the user accepts the notion that everything is 'clickable'. The use of the system of 'rolling-over and clicking' hands over to the user control over certain aspects of the consequence of selection. This control and its consequences are to be outlined later in this chapter.

5.6.4 Signalling selection consequence

> "Although an icon may have a name, it is above all a picture that performs or receives an action, and that action gives the icon its meaning." (Bolter 1991, p. 52)

As Bolter describes, the icon in interface design essentially communicates to the user the consequences of its selection. Having removed the use of icons from the n-space's interface, there is no room for this action to be signalled in traditional terms. However, following the use of specific design cliches from earlier news signals, certain attributes or characteristics concerning an element's status and consequences can be communicated to the user.

Priority is signalled both through an element's position in the space and by aspects of typography imported from the communication of news via the page. For instance, typeface may change to signal an element's growing importance in the news hierarchy. Following cliches from print, type size directly signals priority as could a change in size communicate to the user a change in the item's priority and possible consequence of selection.

The action of 'rolling-over' and single clicking are fundamental techniques by which selection consequence is signalled to the user in the n-space model and are outlined later in this chapter.

5.6.5 Non-seamless/unstable space

As mentioned earlier in this chapter the n-space is seamless in terms of the sequential newsflow which occurs when left to run by the user. Until reader interaction occurs, the n-space model operates without interruption. Without this (human) element of instability, the prototype can be considered seamless in that it runs according to its preprogrammed instructions with the newsflow being represented in real-time.

Interruption is here concerned with the interaction of the user with the n-space. Disruption of and intrusion into the seamless, passive mode of real-time news delivery breaks its stability and begins the processes and consequences of selection and interaction. By 'rolling-over and clicking' any element of any news item, the user is deliberately announcing her presence, interruption and - ultimately - control of the space. The seamlessness is therefore discontinued until the point at which the user's enquiries end or are paused.

5.6.6 Rolling-over

By rolling-over, I mean the action of the computer-user moving their representative in the n-space - a cursor or pointer - over any element or item being presented on-screen. Rolling-over is concerned with user-driven movement, and results in some form of action or consequence. At the moment of intersection between the cursor and the other element - at the point at which they seem to touch, a pre-programmed event occurs.

5.6.6.1 Rolling-over as preview

Rolling-over a news item in the n-space prototype constitutes a specific form of electronic reading; that of signalling to the user the potential consequences of further action or clicking. As items are moved over, other - linked - items appear in the spaces adjacent to the one rolled-over. These newer items can be considered as forms of preview; the potential and possibilities of that rolled-over item revealed temporarily. This preview is removed from the space by the cursor rolling-off the linked item (fig. 5.6.2).

As has been discussed earlier in this chapter, every visible item - or element of that item - in the n-space model is a potential connection. Rolling-over any of these items reveals this potential yet makes no further action, it is in a sense passive and non-decisive. Reader/users in the n-space are able to browse the space, view a news item's inherent, unrealized connection capacity without making any fixed decision. That act of decision-making - and its subsequent commitment - is reserved for the action of selection: the click.

Specifically, there are two forms of rolling-over available to the user in the n-space model; high- and mid-level concerned with previewing connection-potential and an item's content respectively. These modes mirror and are linked to the n-space's passive and active modes

5.6.6.2 High-level: a preview of connection

In the n-space prototype's passive mode, the electronic news flow is visualised for the user. Items enter the space, cluster and organise themselves around thematic nodes, move around and across its conceptual hard structure - on and off the screen - or are removed to other parts of the space, or filed into storage. At this high level, the user can move her cursor across any item and its 'link-potential' is visualised. That is, a set number of other items appear around it.

Using the roll-over as a system of high-level or connective previewing, the n-space model allows the user straightforward, uncomplicated browsing. Navigating the WorldWideWeb, a limited form of previewing an item's link potential is offered when users roll-over a highlighted link; that link's destination address appears in most case (in the browser's toolbar, at the bottom-left of the screen). Web designers using JavaScript allow electronic readers to be presented with other information in place of the link's address; other text describing that link, for instance.

The variety of previewing used by n-space model differs most noticeably to that used in browsing the WorldWideWeb by the fact that whereas the Web only offers the user a one-to-one electronic link, the n-space prototype presents the user with one-to-many links. Upon rolling-over an item, it quickly becomes one of a cluster of related news items, each with a connection and proximity - both in terms of context and content. This multiple link potential allows the user to preview a number of possible avenues and pathways for further investigation.

Fig. 5.6.3 illustrates one example of rolling-over visualising a news item's potential for connection. A routine view of one fraction of the n-space's conceptual hard structure is shown. Items are arranged around thematic nodes in what could be considered a bird's-eye view of the news; various items - presented as headlines - are available to browse while the more general 'noise' of other news continues around the user's centres of attention.

As the user moves the cursor through those items, one in particular is of specific interest. Resting the pointer upon it, a number of other items' headlines appear in the space immediately adjacent to it, encircling it in a ring of previewed news items (fig. 5.6.4). The user is free to move the cursor within this ring; the items remain on-screen for as long it doesn't pass outside.

As no item amongst this preview is of particular interest - and neither is the central item itself - the cursor moves from it, outside the cluster of previewed items and they vanish. The reader/user is then free to move to any other items in the viewable area on-screen, or to move to the screen's edges and continue navigating the n-space.

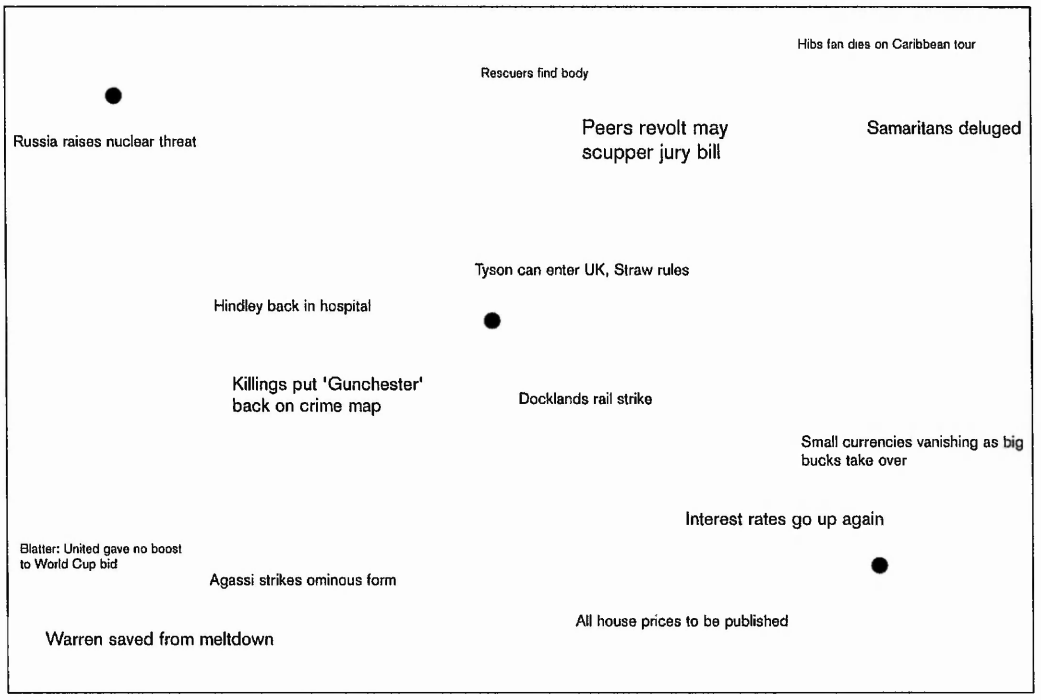

fig. 5.6.3: a fraction of the n-space, with items arranged aroud thematic nodes

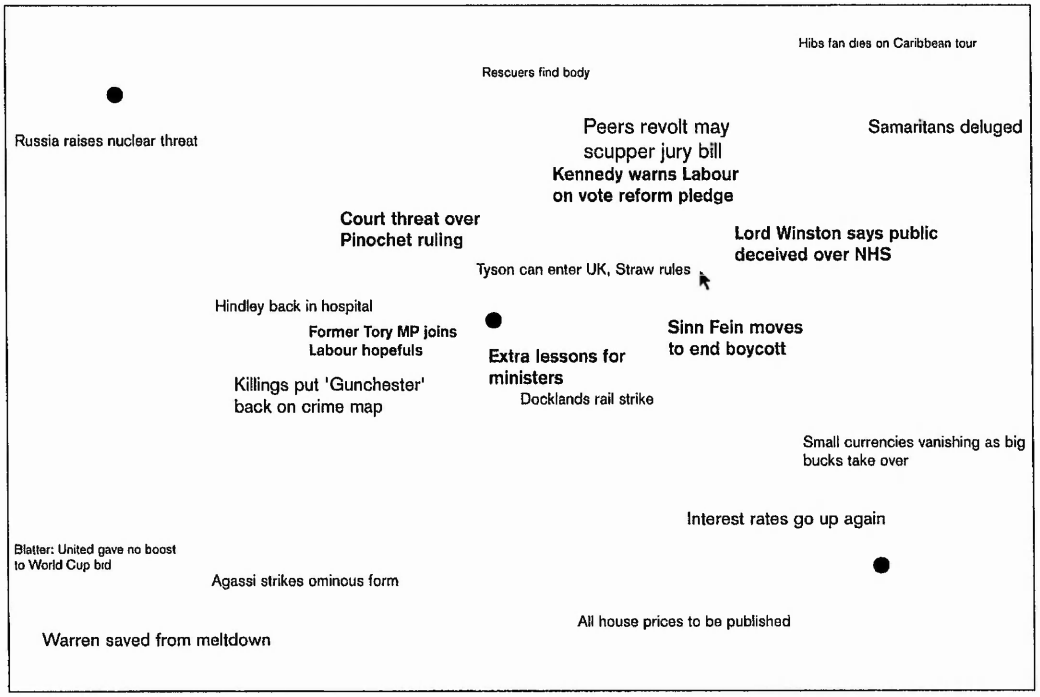

fig. 5.6.4: resting on one particular item of interest causes other - linked - headlines to appear, encircling the main item. These headlines remain on-screen until the circle is crossed

5.6.6.3 Timed roll-over

In the example described above, the act of moving the cursor onto the on-screen representation of a news item - in this case a headline - causes the n-space to respond and present the user with a number of connected news items for preview with the view to selection and further reading. However, as outlined earlier, the mode of navigating the n-space's conceptual hard structure - the space or environment itself - is the same action: movement of the cursor to the screen's edges causing the space to respond and propel and scroll the 'window' or viewable fraction of the screen into areas previously unseen.

As the user makes this movement to the screen's edges with the mouse, her on-screen avatar - the cursor - is most probably going to cross a number of news items. These items might be in the path of the pointer or may appear in the path once the movement is begun. The result would therefore be a visually bewildering, possibly chaotic, number of previewed items appearing and disappearing as the cursor moves across the screen and across their linked central items.

Therefore, the n-space model uses a timed-delay solution, where the user's cursor must remain on that central item for a specific - preset - amount of time. Only when this has passed will the prototype visualise the previewed items in the space. The duration of this delay can be altered by the user to suit particular wishes or preferences.

5.6.7 Mid-level: a preview of content

In the n-space model's active mode the electronic news flow is broken. User interference - selection or interaction - results in a specific consequence: a news item is selected prompting the prototype to respond by repositioning that item to the centre of the screen, and enlarging it to denote it being the metaphorical 'centre of attention'. This choice and focusing of the user's enquiry results in a change in the nature of the action of rolling-over, with a more focused nature to the information being presented for preview.

Fig. 5.6.5 presents the result of user-selection. A news item is located centrally in the conceptual hard structure's viewable area - the screen. Visible is the item's headline, an associated image and the author's byline. The action of selection has resulted in any linked news items appearing around the central news item. These links are now fixed and remain on-screen for as long as this item remains the centre of attention.

At this 'low' level, the space previews the selected item's content in the space surrounding it. As the user moves the pointer over the headline, image or byline, the rest of that item's associated elements - or soft structures - appear around it forming its firm structure: the content of the story, both visual and verbal/oral (fig. 5.6.6).

Around the item, other associated images, sub-heads, captions and nameplates or logos of the originating news organisation appear, completing its fragmented form. Again, these elements only appear on-screen for as long as the user's cursor remains within the inner-circle of the

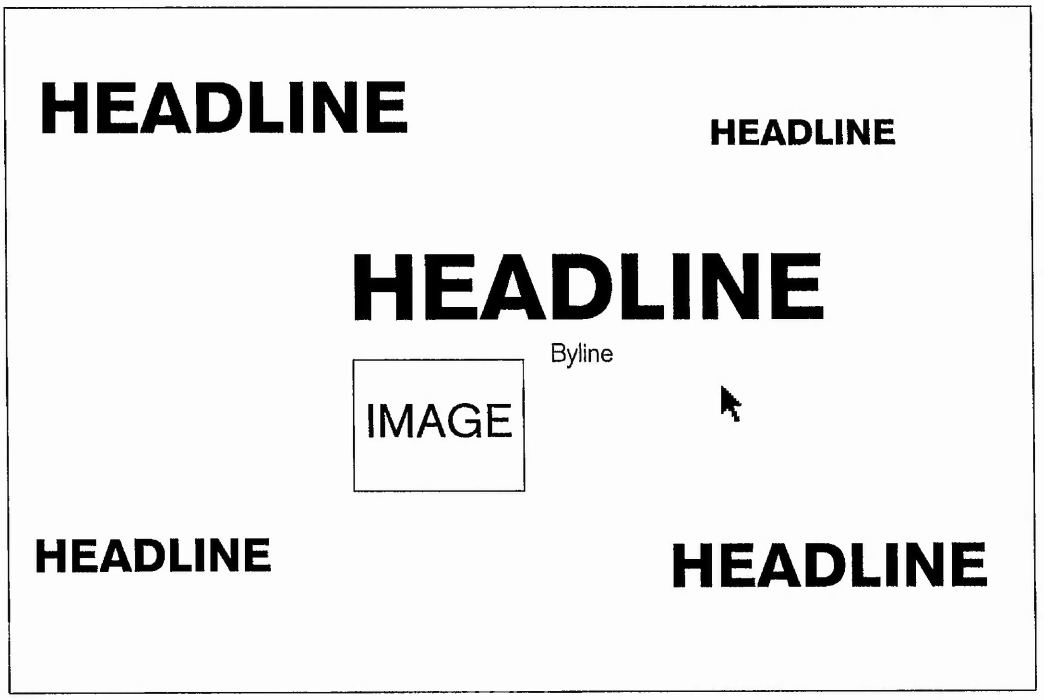

fig. 5.6.5: result of user-selection, a news item and selected soft structures, surrounded by headlines from associated news items

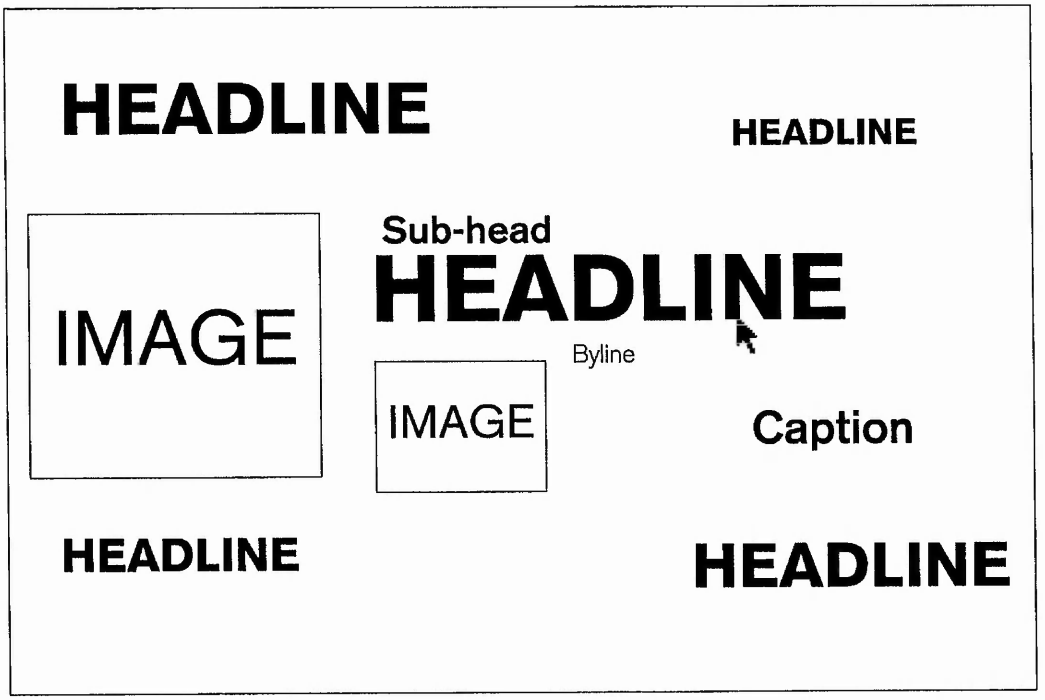

fig. 5.6.6: as the user rolls over any soft structure of the main item, its firm structure is completed for as long as the cursor remains upon them

item's key soft structures. The pointer moves outside this circle and, again, the elements that complete the item's firm structure disappear. The reader can then continue with her enquiry.

5.6.8 Clicking

Electronic reading and writing are entirely dependent upon clicking, it is a fundamental aspect and action of all digital media. The gesture of clicking upon anything visualised on screen by pointing the cursor at it and performing a physical act: making a hardware selection action - clicking a mouse button or a joystick or trackball button or applying pressure when using a trackpad's stylus - is the primary method by which user-selection is indicated in electronic communications in general, and in the n-space model in particular. By making this decision to click, the computer-user is signalling assent; granting permission for something - some form of consequence - to occur, and re-connecting or re-establishing the latent potential held dormant within the two ends or broken threads of a link.

5.6.8.1 Clicking: fixing and moving centres

The action of selection - as has been mentioned briefly in this chapter - fixes the user's attention upon one item in the n-space. This selected item therefore becomes the centre of the user's attention; the fixed central node in the matrix of connectivity of related items. This fixity is temporary; again recalling the processes of browsing printed newspapers, the user's attention is fleeting. Mirroring the eye's movement upon the printed page and the pausing, focusing and relaxing (both physically and conceptually) that occurs, the fixed centre of attention in the n-space model shifts position upon the conceptual hard structure to match the user's fluidity of focus.

This moving centre of attention is made explicit by the n-space moving the conceptual hard structure; once clicked, any item automatically recentres itself on the screen. Other items now become satellite items to this node. This shifting or decentralisation is again an important aspect of hypertext and electronic reading. As Landow (1992) makes clear, the user's interests become the key organising principle at any moment and actually give structure to much of what is communicated.

Figure 5.6.7 illustrates the notion of moving centres; a number of items are surrounding a thematic node - as its title suggests an organising factor in the n-space model. Upon selection, an item is moved to the centre of the screen and is surrounded by linked items (fig. 5.6.8). When one of these is itself selected it now moves to the centre of the viewer's gaze (fig. 5.6.9). The older item now becomes a new satellite element in the array of news stories. It can be returned to the centre, or the second selected item can itself be replaced by a newer focus of enquiry.

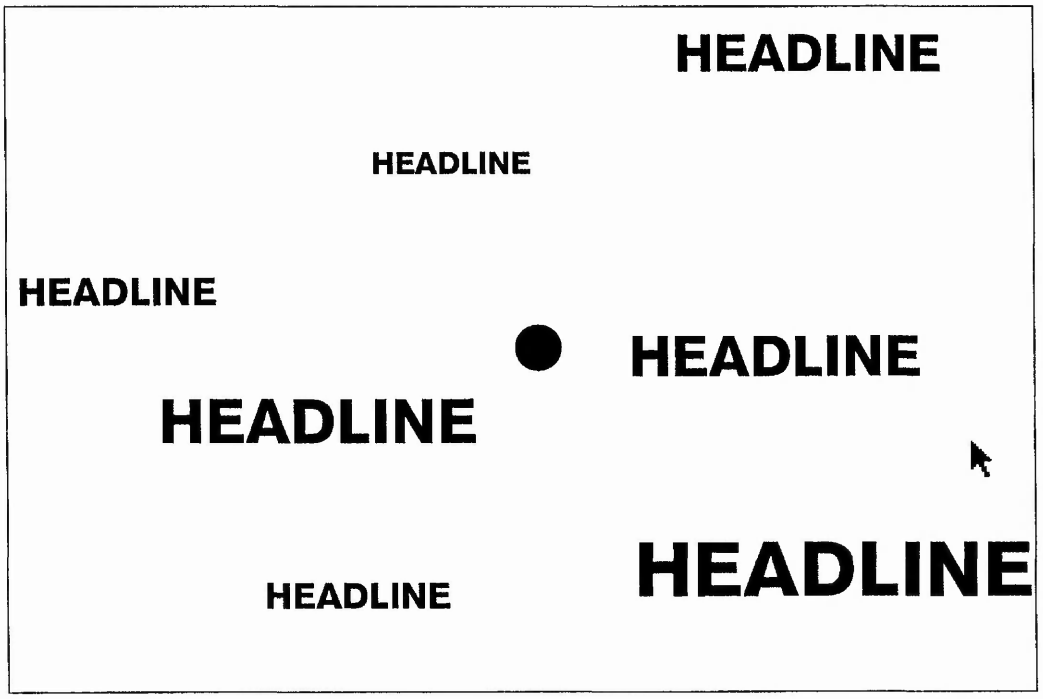

fig. 5.6.7: headlines surrounding a thematic node as the user browses the n-space

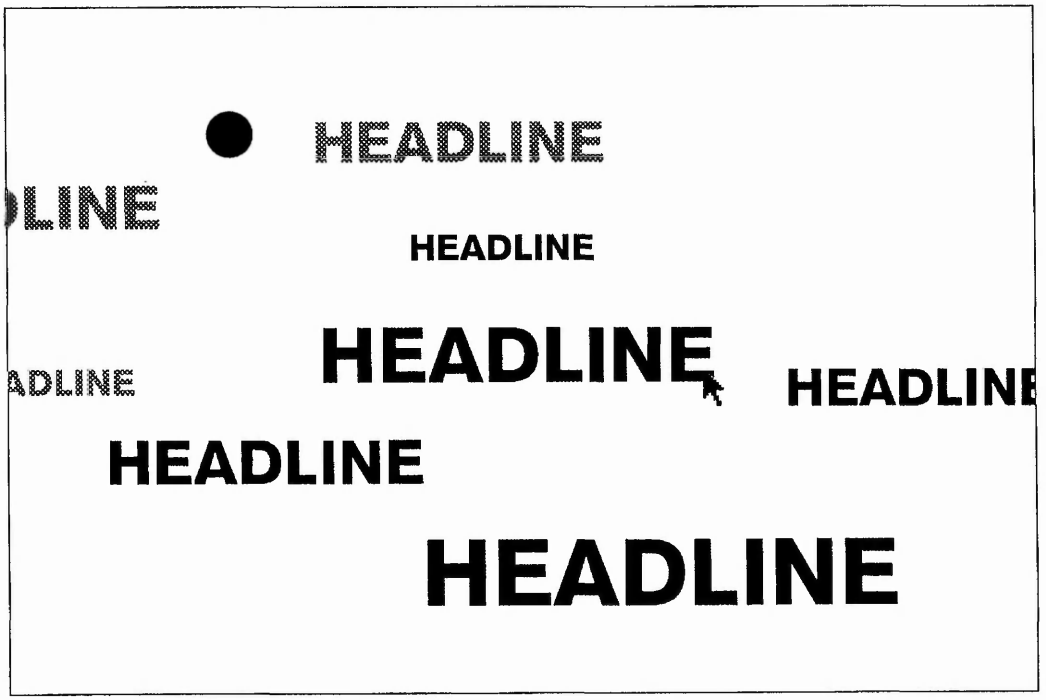

fig. 5.6.8: one headline is selected and it moves to the centre of the conceptual hard structure, becoming the user's centre of attention, and is itself surrounded by linked items

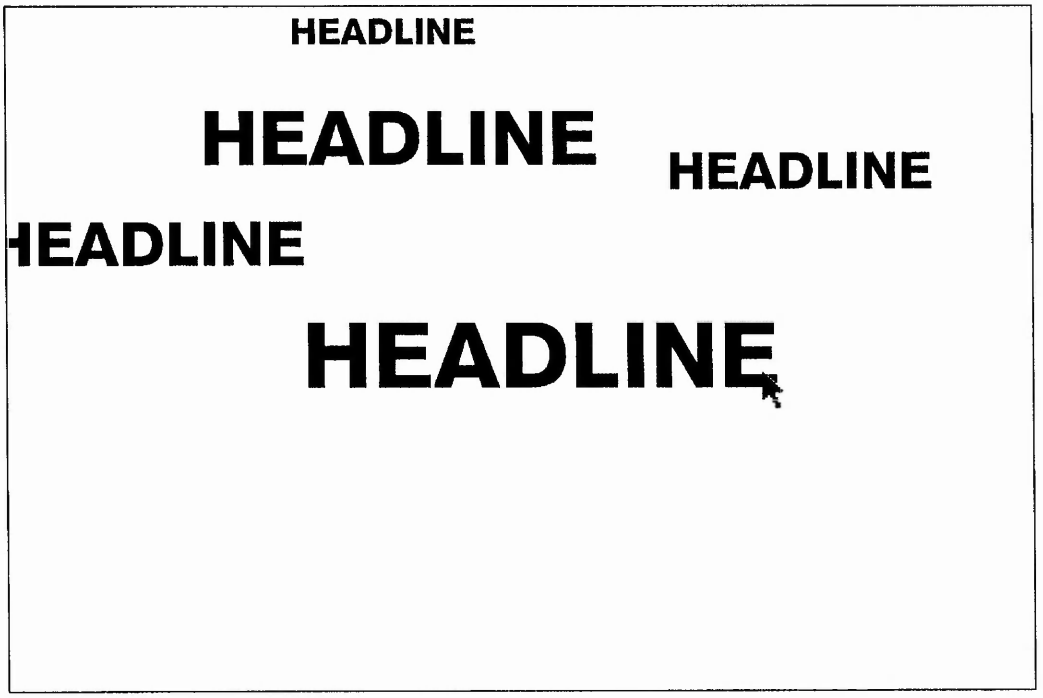

fig. 5.6.9: one of these newer headlines is selected, becoming the new centre. The older item becomes a satellite of this new focus

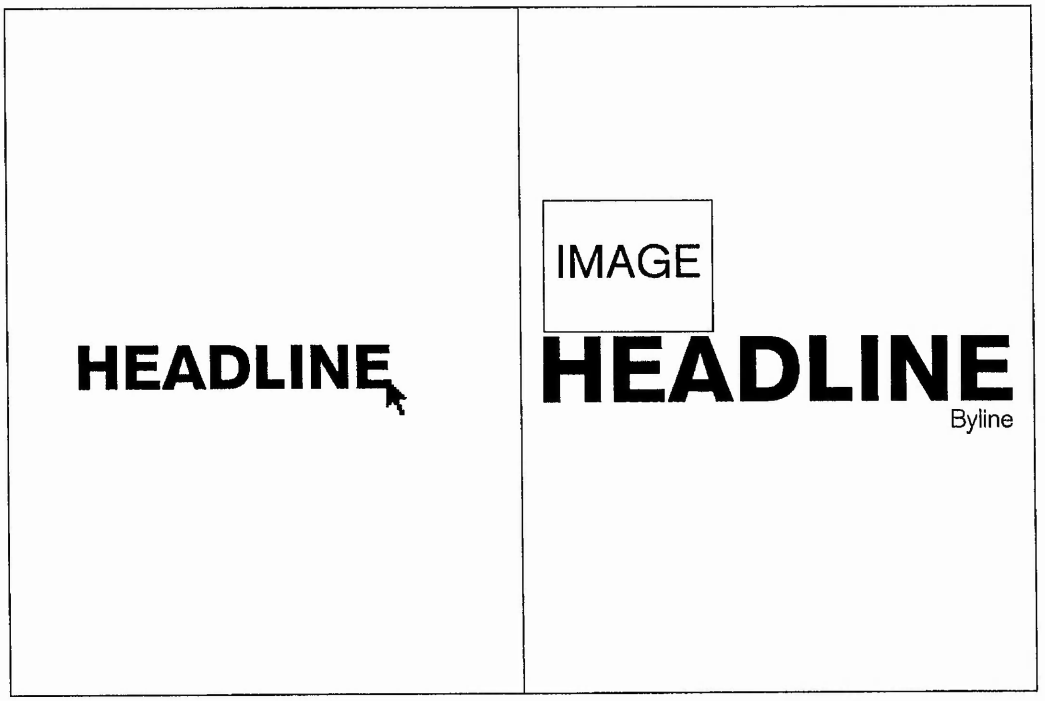

fig. 5.6.10: left: an item has been clicked, moving to the centre of the conceptual hard structure; right: it is increased in size by fifty percent and its associated soft structures are shown

5.6.8.2 Single-clicking: mid-level focus

The n-space model makes a distinction in its use of the click as a form of signalling assent or making a connection: the user can either click once or twice upon any item. The double-click is used in the majority of computer applications to perform certain commands - for instance, opening applications or files - and the single-click performs a number of actions in some cases: the selection of a hyperlink when browsing the WorldWideWeb, for example.

In the case of the single-click, its use in the n-space prototype is concerning with fixing a 'mid-level' focus on an item. By making one click, the user is signalling an interest or partial decision in terms of whether the item will be of sufficient interest to prompt further reading. Single-clicking makes (temporarily) permanent the links previewed by rolling-over; they appear and are established around the selected item. Moving onto one of these newer items will present the user with previewed links concerning its focus and them: in this instance, single-clicking and rolling-over can be combined as an important technique for reading in the n-space.

For example, an item is clicked once. The n-space model responds by centring that item - as mentioned previously. The item is then increased in size - by fifty per cent - reflecting the user's noted interest and attention; it fills more of the screen's 'real estate', signalling the change and development in its importance to the user (fig. 5.6.10). Following its increase in size, the user is presented with the item's linked items: they fade onto the screen at places radiating from the central - or primary - item (fig. 5.6.11). These other items are themselves now clickable: selection of one would shift it to the centre. This position of prominence is what is termed the n-space's mid-level; a decision has been made without complete commitment to the item. Clicking once on the primary item results in the linked items disappearance and the item decreasing in size, returning finally to its original 'uncentred' position in the space.

With the primary item at this mid-level of focus certain indicators of content are presented for preview. By rolling onto any of the central item's soft structures - headline, image or byline - the item's firm structure is completed (fig 5.6.12). Body copy, a number of supporting images and other elements appear in the space adjacent to the item presenting to the reader a news story which is visualised only for as long as the user's cursor remains on the headline (or whatever the primary element might be).

5.6.8.3 Double-clicking: low-level focus

Double-clicking an item at any point when navigating the n-space presents to the user with that item at a 'low-level' focus. The nature of the double-click is that it is granting complete assent or a complete decision to view an item. A user can either follow the chain of actions and consequent events outlined in this chapter: from rolling-over, to single-click and then progressing to double-click in order to view an item' content, or that item can be immediately double-clicked and the n-space responds accordingly (fig. 5.6.13).

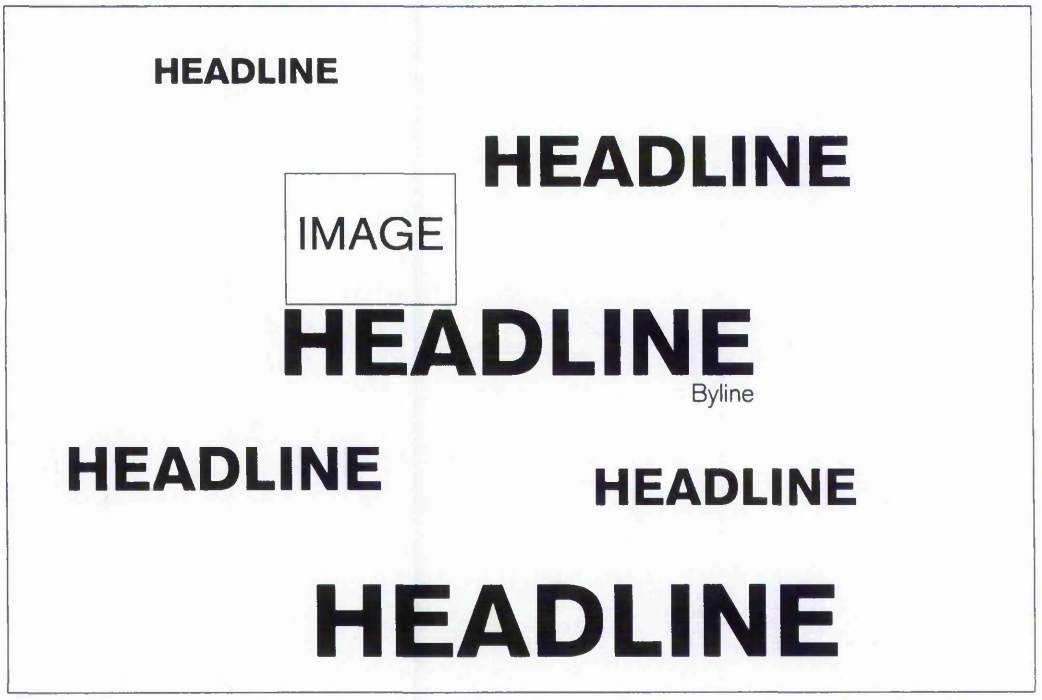

fig. 5.6.11: associated, linked headlines are visualised around the primary item

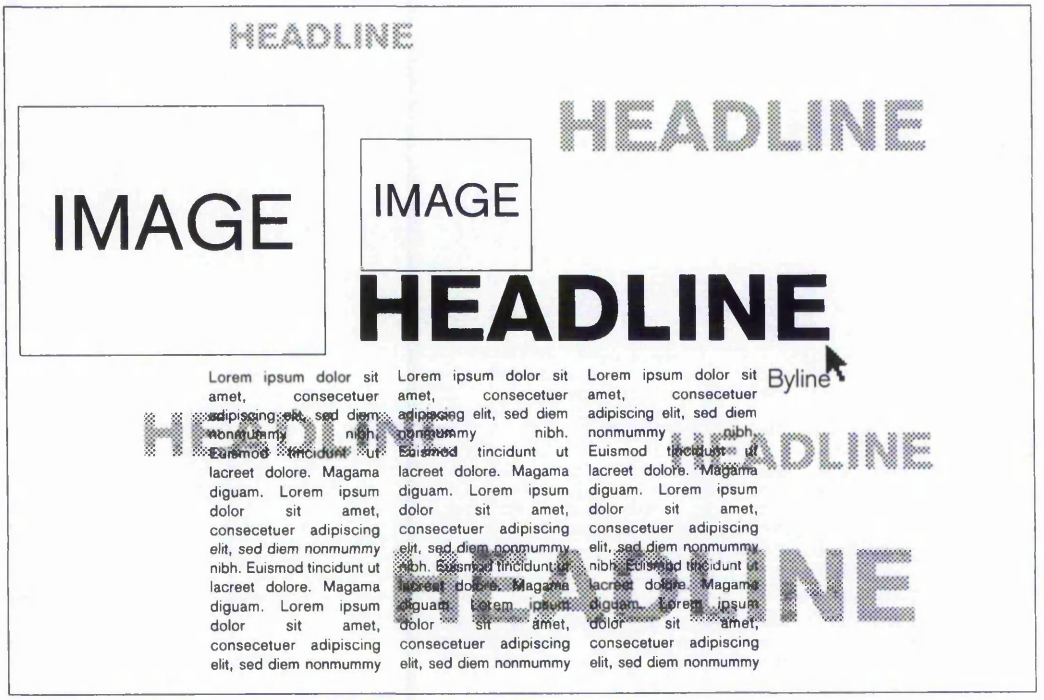

fig. 5.6.12: rolling onto any soft structure of the primary item completes its firm structure, presenting body copy alongside soft structures. During this preview, other headlines are sent to the back

fig. 5.6.13: double-clicking onto the headline of the primary item (fig. 5.6.10) would automatically present the user with its firm structure, bypassing the mid-level focus

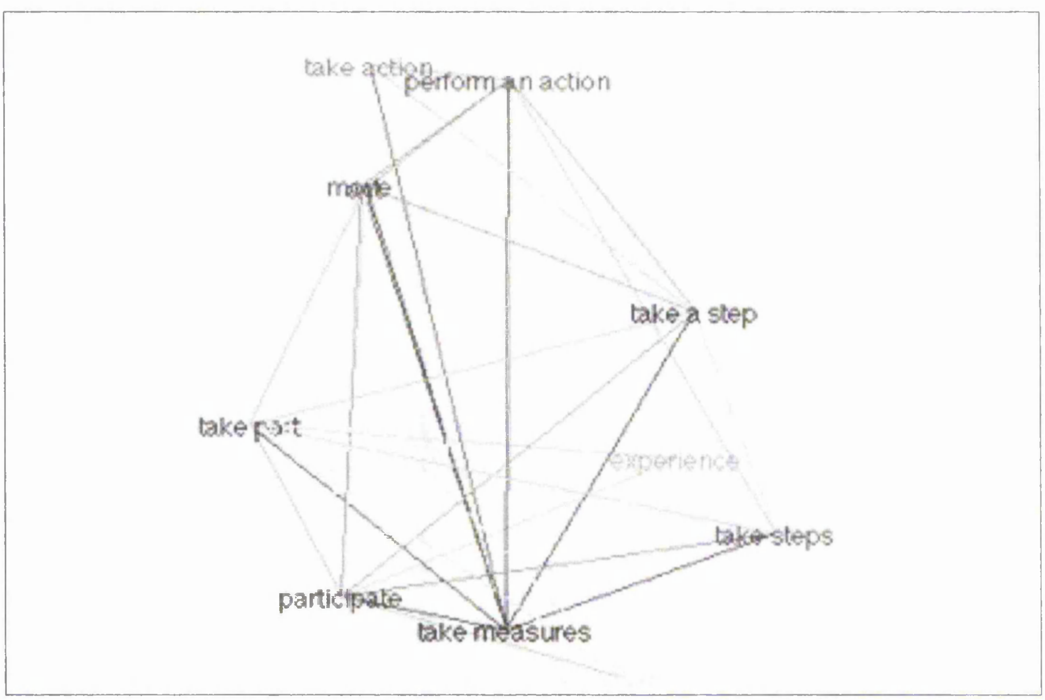

fig. 5.6.14: Plumb Design's Visual Thesaurus

5.6.9 Summary

To summarise, rolling-over and clicking offers the n-space with a seamless system for user-interaction and information processing. The concept of rolling-over and clicking - in terms of how it is referenced or defined in this study - is concerned with stepping back from the clutter of onscreen communication design. Eschewing buttons or icons allows the notion of a seemingly transparent design,context sensitive and apparently self aware, to emerge.

Importantly, given the relative scarcity of onscreen 'real estate', the aspect of previewing potential content which the rolling-over concept allows presents the user with significantamounts of information in what can be a small space and would hopefully enable n-space users to focus upon making pertinent connexions following browsing.

6 Conclusion

Within this thesis, I have defined and discussed a theorised system or model for electronic information transfer and consumption. This research has addressed a convergence of communicative structures from older models of information or news media and noted the apparent necessity and perceived value - in terms of user comfort and conceptual stability - of the carry-through of so-called communicative cliches from these models. The model's practical application is focused upon news: one specific form of content or information whose key qualities are considered significant and have been both mapped and discussed by Somerville (1996, p. 4).

This thesis is concerned primarily with two key research problems:

- the formulation of a theorised, hypothetical model for a system which allows access to electronic information by a process of intuitive, active exploration in a four-dimensional dynamic, responsive environment.

- an analysis of three systems of news communication which both informs and underpins this model

Although presented above as being separate or distinct, from this research it is clear that a proposed solution to the first problem relies almost completely upon the second, and that the relationship between these two issues is an integral aspect of this thesis.

Within this conclusion I aim to revisit what I consider to be the central themes of the thesis. Whilst undertaking this, I highlight and discuss aspects of the research, their implications and specifically their contribution to knowledge within the selected field of enquiry.

6.1 Summary

The n-space model centres around six key issues which provide its theoretical foundation. Each issue is concerned with one significant aspect of the model in terms of electronic communication design and its potential use and application to news: with electronic topography; spatial and temporal organisation and visualisation; the application and integration of dynamism and movement; new techniques for navigation and processing electronic information; signalling connectivity, and with remaking older communicative cliches in this new space. Each of these issues is presented within the thesis where specific aspects of them are critically discussed.

These issues are themselves founded upon the results of interlinked analyses of printed news, television news and news on the web. Each was appraised in terms of certain specific communicative structures: hard, soft and firm. These analyses were the product of a focused study of relevant literature which aided the development of a theoretical or communicative framework or terminology through which distinct media could be examined and their communicative structures compared.

Specifically, the development of the concept of news-spaces and signals (2.61, 2.7) allowed the formation of a frame of reference through which a set of comparative analyses could take place. This framework drew upon Bolter's model (1991, p.41) of hard and soft structures through which it was possible to discuss each instance of news communication in terms of its physical surface and the sets of "...visually determined units and relationships that are written on or in the hard structure." (ibid) This model was discussed and extended to enable a clearly focused analysis of systems of organisation and visualisation in use at the time of the sample's collection.

Each of these key stages within this process of research will now be discussed in detail with relation to particular issues.

First, I locate the n-space model within the context of related work - specifically with relation to four issues - and discuss its connections to a selection of existing theoretical research and examples of communication design. Next, I revisit the analyses of news media, the subsequent appraisal of their results and the identification of patterns of communicative structures, with specific reference to Bolter's analytical model, its application, and notably its augmentation and extension within this research.

I progress to an outline of the six key issues identified as a result of the study of news - the application of theory derived from existing systems of communication to a new model - and argue that the design cliche is of significant value in the sphere of new media design, highlighting two specific instances. I then summarise the original contribution made by this research. Finally, I outline and identify certain limitations within this research and suggest avenues for further research.

6.2 Related work

As communications technologies develop, information increases quantitively and issues relating to both its emerging complexities and with more-effective forms of user-interaction and information management seemingly come to the fore. Notions of interactive, dynamic information management, organisation and visualisation are growing in significance within certain aspects of communication design (alongside areas such as knowledge management and hypertext theory, for instance). Rich and distinct areas for research are being established and defined. Most significantly (in terms of this research) two organisations - one commercial, the other academic - have produced a range of related examples which I will discuss within this section of the conclusion. Alongside this, I will mention two other instances in which parallels can be drawn

with the n-space model.

6.2.1 Plumb Design's Thinkmap and information management

Plumb Design, a New York-based design consultancy, have developed Thinkmap, a software platform "...for displaying, animating, and navigating complex and interconnected information..." (Plumb Design 2000, p. 6) Thinkmap's objectives for knowledge management and for visualising complex informational structures are shared by the n-space model. Similarities in terms of spatial organisation, link visualisation and aspects of navigation can be drawn between the Thinkmap platform and the model proposed within this research. A seemingly three-dimensional space for user navigation and interaction is presented, primarily through the use of typographic content. User action promotes response from the information in terms of a reorganisation and representation of its content.

I feel these similarities strengthen those linked communicative structures used within both models. Their use within solutions authored through Thinkmap - Plumb Design's Visual Thesaurus and the Smithsonian Institute's Revealing Things exhibit in particular - provide an element of realisation and practical application whose success supports the theoretically justified inclusion of those aspects within this research. As was mentioned earlier within this thesis (5.6.3.1), both models share the overarching principle of 'non-interface interaction design'.

Whilst fundamental differences are apparent between both models, parallels can be made between the Thinkmap platform and the n-space model. Specific links can be drawn in terms of information management and visualisation, although a distinction can be made where this research is one founded and presented foremost within a clear theoretical context.

However, the identification of comparable systems of organisation and visualisation perhaps indicates their communicative potential, and distinguishes this similarity as something to be positively and explicitly acknowledged. This recognition reinforces their utilisation within the n-space model.

6.2.2 Visible Language Workshop and spatial context

Certain work undertaken at M.I.T.'s Visible Language Workshop (under Dr. Muriel Cooper and David Small) shares conceptual similarities with the n-space model in terms of communicating specific content through the use and interaction with complex information landscapes. These information environments present "...clusters of information objects (which) are scattered throughout the three-dimensional space on a computer. The viewer can fly through this space and encounter the separate intelligent objects and not get lost. The environment provides context." (Bradford (ed.) 1997, p. 202)

Like the n-space model, spatial arrangement and location within these information environments supplies the user with specific context related to content (5.1.3). The three-dimensional, chiefly typographic data landscapes perhaps link closely to virtual reality systems where the user/infonaut can move around and through complex patterns of information. This immersive

experience allows clear spatial relationships to be visualised through explicit reference to a physical environment.

As has been acknowledged earlier within this thesis (5.1.2.1), the notion of information landscapes - and, specifically, work such as 'Virtual Shakespeare' (Small 1996) - have influenced the development of the n-space model, primarily within aspects of context-provision through topographical and spatial organisation. Similarly, interaction though three-dimensional investigation is discussed within this thesis (5.1.3.1, 5.1.3.2, 5.1.3.3) although differences in the use of the z-axis are apparent. Within the n-space model, it is utilised for specific organisational purposes (communicating temporal hierarchies) rather than to present a sense of exploratory, virtual space.

Interestingly, the Visible Language Workshop has turned it's attention towards news and the communicative issues associated with its organisation and visualisation within three dimensions. 'News Views', produced by Yin Yin Wong represents selected news items upon a square, three-dimensional plane where they are organised into 'piles' (Bradford (ed.) 1997, p. 208). These organisational mechanisms are similar to the n-space model's thematic nodes (5.1.10). Again, the realisation of a need for such communicative structures reinforces their inclusion within the n-space framework.

6.2.3 John Maeda and kinetic typography

The concepts of dynamic news and the visualisation of electronic data flow (5.3.2) and the movement of news items within the n-space model can be linked to specific forms of onscreen moving text, in particular the kinetic typography of John Maeda.

Maeda (2000) makes clear the significance of on-screen movement as a particular means of signalling specific qualities of information to a user. The factor that words and letters are kinetic elements upon the screen cannot be separated from their importance and application as 'reactive graphic systems'.

> "The common thread to all reactive graphic systems is the condition of time. Time can be perceived in one of two ways: as a natural precondition for reality or as a state measurable with respect to some specific reference." (p.109)

Here, Maeda's second statement presents a parallel to be drawn with the n-space model. In particular with relation to news, the 'condition of time' underpins numerous communicative structures within this research, specifically during the discussion of the six key aspects. Particular references are made within the model to actions which take place in respect to qualities of time, as a system for both measuring and signalling progression, activity and movement, and for communicating specific hierarchical qualities both spatially and in terms of particular types of action. In work such as 'Flying Letters' and 'Tokyo Type Director's Club', Maeda utilises dynamic onscreen typography to communicate qualities of movement alongside a playful use of kinetic text, often describing this work as having qualities of abstraction, and emphasising the joy of letters and words which move.

Those communicative concepts outlined within this research concerned with on-screen, dynamic news items are founded by and embedded within a strongly theoretical context. Within the n-space model, dynamic movement is contextual insofar as it aims to supply users with specific information regarding the data through its actions, its spatial organisation and topographical location.

6.2.4 Cavalier and Chandhok and the column

The identification of the column as a cliched communicative structure whose role and function could be redefined within the n-space model (5.5.3) has a direct connection to Cavalier and Chanhok's (1991) discussion of the column as a mechanism for collaboration and annotation. Their research has focused upon extending the column's use "...as an interface for cross-referencing and placing comments in their context." (p.187) In particular, the development of 'PREPEditor', and more recently 'CommonSpace' - both tools which present the practical realisation of their research, reengineer the column for a new technology, with similar intent as that proposed within this research.

The use of explicitly linked columns within both PREPEditor and CommonSpace has obvious parallels with the n-space model's use of nested columns to visualise and illustrate hypertextual link structures (5.5.11.1) and this is acknowledged within the thesis. The n-space model continues to extend the column's communicative potential as a significant soft structure with the introduction of dynamic factors to communicate particular contextual information (5.5.10.1).

6.3 Linguistic/theoretical framework and analyses

In order to undertake a focused review and appraisal of a range of forms of news communication, it was necessary to develop a theoretical framework through which these analyses could take place. A linguistic framework - the definition and outline of news signals and news spaces (2.6 and 2.7) in particular - provided an informed critical context, and a theoretical framework outlined conceptual structures through which these analyses could take place. Each news media could therefore be assessed comparatively, using a shared conceptual framework: that is, discussed using the same form of analytical 'language'.

6.3.1 Bolter's model: writing spaces, hard and soft structures

Whilst owing a considerable conceptual debt to Bolter (1991), and to a wider discussion regarding the spatial metaphor within emerging electronic communication, this research's reframing of this terminology and its application to news - specifically upon visual and verbal communication within news - both synthesises methodologies from differing disciplines and applies them to original empirical work.

Primarily, the analytical model used to appraise the selected news media was founded upon Bolter's model of hard and soft structures (Bolter 1991, p.40-41). Bolter defines and discusses 'writing spaces' (p.11) as physical, visual and metaphorical or conceptual spaces where "...the

creative play of signs..." (p.10) takes place in a process of externalisation of the writer's thoughts. Writing spaces, Bolter claims, are "...characterized by the interplay of writing materials and writing techniques used." (p.41) It is these sets or units of materials and techniques which he categorises as hard and soft structures, respectively.

Using Bolter's model, writing spaces on both the page and the screen could be appraised and their respective hard and soft structures discussed and compared. Within this research, this model was identified and utilised since its primary concern seemed to be forms of visual communication in use within each writing space, or specifically, its news space. Also, since both print and screen-based media were to be analysed, Bolter's model appeared flexible in terms of bridging this technological gap due to its focus upon materials alongside techniques. This theoretical framework presented a means of cross-examining what are seemingly separate media and allowed the identification of shared communicative structures to take place.

6.3.2 Firm structures

Bolter's model was extended in order to make clear parallels between each form of news media, with the aim and intention of comparing their communicative structures. The notion of a 'firm' structure was developed to describe and discuss systems, collections or networks of soft structures when organised into notable and recognisable patterns (3.3).

The firm structure was itself refined in order to allow more flexible classification of soft structures within two distinct categories: micro and macro. Micro firm structures were defined as those utilised in the organisation and visualisation of an individual news item or story, or possibly one aspect of it (2.11, 3.3, 3.9 and 4.4.2). Macro firm structures were defined as those organising and visualising in a broader, global sense. More complex than micro, macro firm structures are collections of firm structures and are organised into three types, from high- to low-level: signal, section and story, respectively (2.11, 3.9, 4.4.1).

With this extension of Bolter's model - and its further augmentation - it was possible to classify and appraise communicative structures used within news to a sophisticated degree. On a practical level, distinguishing each hard structure defined the tangible qualities inherent and local to each media type. Specifying individual soft structures allowed a discussion of elements used within each news space to take place. Reframing these soft structures within each category of firm structure presented each media's systems of organisation and visualisation within a flexible, transparent and highly portable theoretical framework: a complex and innovative lens through which intricate patterns of communicative structures can be identified. This model's portability and flexibility allow for its potential development and further extension or refinement, and potential application to other disciplines and information forms outside of news.

6.3.3 Conceptual hard structures

Bolter's model was again further refined and extended within this research. Conceptual hard structures were defined in terms of each media's material technologies and their links to distinct conceptual and metaphorical spaces (3.5, 4.2.1, 4.2.2 and 4.2.3). Printed news, television news and news on the web were discussed in terms of their conceptual hard structures: surface, thread and space, respectively. These discussions both compared these forms of news communication and reestablished a refined theoretical framework through which the research was able to determine one of the model's key theoretical notions: the electronic n(ews)-space (5.1.2). This synthesis - of the results of the analyses and of a qualitative extension of the previously established analytical framework - takes place throughout chapter four.

6.4 The n-space model's six key aspects

As a consequence of the analysis of forms of news media and subsequent discussion of common communicative structures, six key issues were highlighted. Each was discussed and related concepts were identified and integrated within the discussion. These aspects were focused upon the following fundamental matters of contention:

- the spatial metaphor or paradigm, the sense of geography or territory which underlie the n-space model;
- the communication or signalling of specific hierarchies of information through the organisation, co-ordination and spatial arrangement or presentation of news items;
- the visualisation of dynamic news flow and the communicative structures emerging and associated with it: speed, direction and trajectory, for instance;
- the development of design devices for signalling specific hierarchies or levels of explicit or visible hyperlinks and information networks;
- the redefinition and re-classification of established structural systems - in particular the column - as dynamic organisational elements;
- the emergence of processes of user-computer interaction and on-screen information processing, specifically the act of selection and its consequences, and the notion of moving or shifting informational centres mirroring the user's focused attention

This theoretical outline presents the conceptual foundation and theoretical framework for the n-space model. As was specified in the introduction to this thesis, this research presents as its outcome a framework for a proposed practical solution which is in itself based upon explicit theoretical and critical analyses, rather than an artefact or notionally complete design solution.

This identification of distinct communicative principles within the research outlines specific elements which I nominate for inclusion within the n-space model. Whilst it could feasibly be possible to develop a system like the n-space model through a process of practical investigation and stages of growth and evolution - as is partially evidenced within the discussion of related research - a theoretical justification can be made to support most aspects included within the model.

The value and effectiveness of these communicative structures is acknowledged and recognised both in terms of their emergence from a process of critical analysis and by the process of theoretical discussion which is undertaken as each aspect or issue is outlined. Their continued use - and in some cases redefinition - rests upon the clearly developed empirical and analytical inquiry undertaken within this research.

6.4.1 The transdisciplinary n-space model

The notion that this research is transdisciplinary presents a strengthened theoretical context through which the inclusion of aspects within the model can be justified. Bolter's model of hard and soft structures, for instance, is founded within hypertext and literary studies. It's refocusing towards specific aspects of communication design is followed by its application upon and use within analyses of news on the page and the screen.

As is outlined within the literature review (2.1, 2.4) key intersections within this research present points of enquiry which are mapped and discussed. Within each theoretical exploration of the concepts highlighted for inclusion within the n-space model, further cross-disciplinary research takes place. The justification for each aspects' involvement within the model is reinforced through this conceptual shift between distinct areas of knowledge.

Alongside this, the fact that certain structures are carried though to the model for their potential as communicative cliches within a new media space is explicitly recognised.

6.5 Communicative cliches

Within this section I will discuss the cliche and its perceived negative connotations or associations. I highlight one such communicative cliche - the soundbite - and discuss it as an example of one cliche used across different media with differing effectiveness, yet whose deep structure remains assured. Finally, I discuss two examples of communicative cliche whose function is extended and redefined within the n-space model.

6.5.1 The cliche and meaning-exhaustion

It is a key claim within this research that the identification of deep communicative structures within certain media should inform visual communication for newer, developing media. Particular communicative cliches used within aspects of news have been analysed and reported within this thesis. As has been stated (2.13), a cliche is often defined in negative terms. This implied

criticism regards the cliche's meaning to be exhausted due to over-use and/or familiarity. A wider definition can be recognised in the repetition of words, images, actions or events which is apparent within social or cultural contexts. The use of images whose intent is to seemingly shock within certain aspects of contemporary advertising, for instance, often leads through repetition to a jaded indifference due to an apparent exhaustion with the concept as a whole.

In terms of news and its systems for organisation and visualisation - and within this thesis in general - the cliche is not regarded as a wholly negative tool for communication: functionally, its use guarantees a sense of shared symbolic significance and offers a sense of reassurance to the reader/viewer/user within a new media space.

Within news, the current continued use of the cliche could indicate complicity on the part of news-producers. However, in this case the charge of meaning-exhaustion is welcomed: the widespread, unspoken agreement between producer and consumer is reassuring and cliches are reaffirmed with their continuation. A mutual dependence can be identified between consumer and cliche where the reader relies upon a cliche for a confirmation of their surroundings. Their use is dependent upon this reliance.

Asa Berger (1991) highlights that these 'structured associations' are recognised without conscious identification (p.136). Recognition or reaction might rarely occur as a result of ignorance to to their apparent transparency.

6.5.2 The soundbite

As has been noted, in linguistic terms, the television soundbite offers an aspect of concision and distillation of issues or points of view in an attempt to divine simplified meaning from complex sources. Cumings (1992) discusses the reduction from dialogue to monologue within television news to satisfy the need for soundbite references within the news text based upon his own experience (p. 41).

When offering his criticism of this communicative cliche widely used within television news - that a dialogue (the interview) is reduced to a monologue in the service of the production of deliberately excised fragments whose meaning is defined and framed by its position in the flow of television news' juxtapositions - Cumings makes a direct comparison with printed news. Where one form of news communication seems to present a more contextually satisfying experience for those sources it references (in this case, interviewees), another risks alienating them due to their potential feelings of misrepresentation, and perhaps more significantly miscommunicating their comment due to a process of selective editing and possible omission.

Whilst the soundbite cliche isn't used in printed news to deliver content in a directly comparable manner, the isolation and typographical enlargement of certain quotations from an interview, for instance, is used in the sample within the earlier analyses (fig. 3.9.3 - 3.9.4). This similar use of the soundbite or concise visual reference links directly to a more detailed textual report: the soundbite is presented contextually. Furthermore, the fragmented and fragmentary nature of news on the web within this research and the preponderance of linked elements within the news

space presented a similar use of the soundbite/reference cliche. Again, the soundbite could be clearly contextualised whilst retaining its use as a mechanism for concision.

As can be noted through this discussion of the soundbite communicative cliche, its use and apparent effectiveness in terms of clarity of communication differs across the range of media presented within the analyses. A shared symbolic or conceptual significance is apparent within the use of this communicative cliche. Its deep structure remains consistent across print, television and the web: specifically, being a means of presenting a concise, excised fragment in the service of simplicity. However, its superficial presentation across these forms of news communication is seen to differ, with its context, use or application determining its effectiveness.

Alongside the identification of certain cliches within the analyses whose use within the n-space framework was guaranteed, others were developed and extended as their potential was reframed for their new context or application: in particular, the column and the headline.

6.5.3 Electronic columns

Through the analyses of news media, issues concerning the communication of news-content were identified and discussed. Each news sample presented its newstext with explicit reference to its conceptual hard structure (4.3.1.2; 4.2.1, 4.2.2, 4.2.3). The column of text was used in all three forms of news communication to deliver content: it is regarded as a key, cliched soft structure.

Primarily within printed news and news on the web, and to a lesser extent television news, the column presents written or printed information to the reader/viewer/user in a highly functional communicative unit and as a 'verbal linear-interrupted system'. (Twyman 1990, p. 207) It is the definitive organisational structure in written communication, a structural unit of currency within printed news and, as has been noted, is a communicative cliche supplying continuity between media.

Therefore, the column (5.5.3) is reprocessed within this research as a dynamic soft structure whose continued use within the n-space model is seen as fundamental. As has been recognised, when linked to related research it's redesigning within this thesis extends its use appropriately within the context of its new conceptual and technological framework, enabling a more flexible use of this soft structure.

In particular, the development of dynamic column width and height (5.5.10, 5.5.10.1) defines and redefines this communicative structural unit in accordance with certain specific user-driven conditions, hierarchical and contextual changes, and is founded upon the notion of a central column mirroring the user's centre of attention. Nested columns further develop the use of the column as a means of illustrating and visualising hypertextual structures. (5.5.11.1)

6.5.4 Moving and linking headlines

Both in terms of summarising key content and communicating hierarchy and associated systems of prioritisation, the headline is considered a fundamental soft structure in the construction of any news item. Again, the n-space model allowed this communicative cliche to be remade. The notion of headline-as-image or moving headline (5.2.6) reflects a sense of conceptual dynamism which underpins the n-space model: a loop of significant imagery replacing a typographic signifier whose context is reinforced by other, juxtaposed, elements (5.2.6.2).

Similarly, the headline - like all visual elements within the n-space model - becomes an active linking mechanism. Following the use of the interactive headline-as-link in the sample of web news (3.8), the dynamic of electronic reading within the model reframes and fragments the headline's spatial relationship with other soft structures in the communication of information; specifically that these elements aren't necessarily presented within the same space on the model's conceptual hard structure (5.1.11).

6.6 Original contribution

It is my contention that this thesis offers an original contribution to knowledge through certain specific approaches in which the research's key aims are addressed and processed (as outlined in chapter one).

To summarise, the primary contributions of this research are:

- the definition of a linguistic and theoretical framework with which separate or distinct media forms can be appraised, in particular the extension of an existing model to allow greater analytical detail within the study
- a comparative analysis of three forms of news communication
- the explicit recognition of the importance of old, communicative cliches within new media
- the utilisation of concepts from previous analyses to construct a theorised system or model: the identification of communicative principles with which a theoretical justification can be made for most aspects included within the model

6.7 Limitations

Here, I identify two issues resulting from the research undertaken which might be considered limitations when discussing the n-space model. As was stated in the introduction, this research investigates key communicative structures related to the visual communication of news. It was also acknowledged that the use of sound, in particular the communication of news on the radio,

was eliminated from the study. This enabled a focused review of specific forms of communication design most clearly linked - in terms of practice - to that previously undertaken by the researcher and reflecting key theoretical studies identified within the review of literature.

The combination of image and text, therefore, remains the overriding focus for certain aspects of the analyses presented within this thesis. The discipline of sound design and the oral presentation of the news text through the spoken words of the news-caster were excluded due to their being regarded as too broad for the remit of this research.

The proliferation of electronic communications technologies and subsequent and continued development of multimedia applications, in particular the use of the web for growing mass information retrieval highlights the lack of a study of both the use of sound in television and (to a lesser extent) news on the web, and the rejection of radio news at the outset of this research.

Therefore it could be argued that the analyses are to some extent incomplete. The lack of a detailed appraisal of the specific use of sound within this thesis fails to incorporate such intriguing communicative structures as newscaster's tone and the pacing of spoken commentary and narrative. Since the n-space model is presented as a framework for electronic communication then the lack of a specific outline of varieties of spoken output might be considered somewhat detrimental in terms of the model's scope.

Similarly, the analysis of news on the web included and outlined within this thesis was undertaken in 1996. At the time of writing the web has seemingly become part of the social and cultural fabric of first world countries, and within news communication it occupies a significant niche which can only develop. Therefore, it could be argued that an analysis dated five years previously might be considered by some to be out of date.

Superficially, this is true. The web has developed far beyond the snapshot provided within this research, both in terms of its market saturation, use and global population and its developing visual identity. The role of communication design is regarded by some to be pivotal for any website's success. As the technology of web publishing has developed, so have the opportunities for the web designer to produce an outcome more satisfactory in terms of an aesthetic standard which might be expected when compared to older, more established media. It could be argued, however, that significant advances in terms of web-based information presentation have been developed in areas outside of news, Plumb Design's ThinkMap tool, for instance. A more recent sample of news, therefore, might not reveal any particular advances in terms of organisation and visualisation.

Also, one of this research's stated aims was the uncovering of certain deep structures used in the communication of news. Rather than analysing the surface structures used in web news - which might usually be those elements most closely connected to the technologies of communication design in use - this research aims to produce informed results based upon an investigation and discussion of the communicative structures embedded within the 'bells and whistles' supplied by the continuing development of HTML and associated web technologies. It is my contention, therefore, that the analyses of web news in 1996 supplies data of similar

communicative potential than if a similar undertaking took place in 2001.

6.8 Further research

There are a range of linked pathways for further research as a consequence of this research. In response to those limitations outlined above, two specific areas can be outlined initially. Firstly, an analysis of the use of sound in news - in particular news on the radio - could take place to mirror the existing studies of forms of visual communication.

Taken broadly, sound is used in three key media: television news, news on the web and news on radio. To a greater or lesser degree, sound delivers content in the form of the news text delivered by the caster or reader. The relationship between the visual and spoken narratives is complex, when it might often seem that one is edited to match or fit the other and vice versa. Eldridge (1995) points out the similarity between television news and radio in terms of their spoken narrative, and that very often the newscaster to camera image is used to isolate the spoken text from any image content (p.226).The potential also exists to study the use of sound as a structuring device in terms of processing or modulation with the use of techniques such as fading and distortion.

An analysis of news-as-sound which were to take place would necessarily sample from a range of those mentioned above. Currently, news on radio could be regarded as a separate discipline due to the existence of dedicated news stations. Alongside this, news content plays a major part for non-dedicated radio channels, in comparison to its inclusion on television.

Secondly, to address the second limitation outlined above, a comparative analysis might be undertaken placing the existing analysis of news on the web alongside an identical one whose sample is taken from web news in 2001. This could provide either an extension and development of those hard, soft and firm structures uncovered and discussed in chapter three and/or it might reinforce those underlying communicative structures previously identified within the analysis. As mentioned above, it could also identify the lack of progression in terms of communicative structures within news on the web, where significant developments have been made in other areas.

A process of practical implementation of this research's theoretical model seems a key area for further research. In doing this certain principles could be viewed in practice, possibly suggesting subsequent developments. For example the potential of dynamic onscreen movement outlined in 5.2 could be extended with specific relation to the communication of aspects of time.

This process of implementation would be linked to a focused testing procedure wherein aspects of usability and feasibility could be assessed and the model's framework appraised. For instance, users could identify certain issues regarding the use of the x, y and z axes to communicate specific qualities and hierarchies of information (5.1.3.1., 5.1.3.2 and 5.1.3.3). Likewise, each aspect of the model's outline of dynamic news items and their communicative structures (5.3.6)

could be tested to appraise the feasibility of these techniques for signalling contexts or values. This might present new directions for the model, in terms of refocusing certain elements of it and its communicative structures, which could then lead towards further reapplication and development of the testing process.

A practical construction of an n-space model could use news as its focused content-type. However, the integration of another form of complex and dynamic information flow into the framework outlined within this research might present and open up new avenues for research as a consequence of this realisation.

One such content type might be financial information, encompassing financial news, stock market information and updates, and specific localised data such as companies reports and accounts. Also, institutional information related to organisations or corporations, inventory or accounting systems could each be considered viable candidates for inclusion and integration.

Certain qualities of these new information-types could lead to a refinement of specific aspects of the model. It is hoped that the model's communicative structures are flexible enough to allow other forms of content to be applied with minimal need for change.

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