across cultures across languages 3
This series brings together authoritative, user–friendly accounts of various cross–disciplinary approaches to language across cultures. The practical guides that compose the series offer a pluralistic perspective on language and communication, rather than an in–depth analysis of specific issues or a collection of critical studies. They are meant to provide comprehensive, clear and accessible explanations of terms and concepts, as well as evaluations of a range of theoretical approaches. The series offers a well–rounded understanding of language as a social semiotic from a cross–disciplinary standpoint. It identifies the place of linguistic signs and linguistic communication within the broader domains of semiotics and communication in general. The target audience includes students taking introductory courses in disciplines dealing with communication, language and cultural studies, and issues of representation. The guides aim at familiarizing readers with a wide range of semantic and linguistic phenomena in preparation for more detailed study of a particular area, or as a background for other studies. In fact, these guides can be used as both reference works and textbooks. Emphasis is on practical application, with generous examples, selected readings and ideas for research. Advanced semiotic and linguistic concepts are presented in a basic, straightforward format. Each guide also contains an up–to–date resource bibliography, activities and suggestions for further reading.
Acknowledgements

I owe my greatest debt of gratitude to Professor Francesca Trusso, who has contributed to the preparation of this book as a guide, colleague and dear friend, and as the editor of the series. Her trustworthy support, invaluable criticisms and constructive suggestions have made it possible. I would also like to offer special thanks to my University colleagues in the ‘Languages in the Information Society’ Degree Course, who have always been supportive and who encouraged me to finish the project. Thanks are also due to my students who were the first guinea pigs for some of the ideas in the book: their insights and comments have shaped its development. Finally, I really must thank my family, Franco, and all my friends for the forbearance and tolerance they have shown me over the years.
Language in the Multimodal Web Domain

Sandra Petroni
To my Father
CONTENTS

List of Figures
List of Tables
List of Acronyms

Introduction

Chapter 1. Models of Communication in the Age of the Internet
  1.1 Globalisation and the Information Society  21
  1.2 The Roots of Computer-Mediated Communication  26

Chapter 2. The Constituents of Modern Digital Communication
  2.1 Hypertextuality                 35
  2.2 Multimodality      41
  2.3 Affective Interactivity     49

Chapter 3. Entropy in Web Communication
  3.1 Information Overload Vs Usability   57
  3.2 Linguistic Entropy              63

Chapter 4. The Compensatory Properties of Web Communication
  4.1 The Hypers as Compensatory Properties   73
  4.2 Hypersemiotics and Hypermodality   80
  4.3 Hyperlinking      86

Chapter 5. The Classification of Hyperlinks
  5.1 Models of Classification         93
  5.2 Form and Content of Hyperlinks   98
  5.3 Functions and Rhetoric of Hyperlinks 108
Chapter 6. Literacy and Computer-Mediated Communication
  6.1 Computer-Mediated Human-to-Human Communication Vs Human-Computer Communication 115
  6.2 Literacy in Computer-Mediated Communication: Multi- or Hyper- ? 122
  6.3 Global Vs Local: Glocalisation 127

Chapter 7. Web Textuality: Migration of Forms and Processes of Hyper-gen(e)ration
  7.1 The Dissolution of Boundaries 135
  7.2 Web Genres: New Genres or Hybrid Forms? 141

Final Remarks and Future Work 157

Cited Works and General Bibliography 161

Name Index 193
Subject Index 197
LIST OF FIGURES

Figure 1 Shannon & Weaver's model 28
Figure 2 MacKey's model of intentionality 29
Figure 3 Jakobson's communication model 30
Figure 4 Petroni's diagram of communicative acts 50
Figure 5 Cognitive and affective terrain 53
Figure 6 The institutionalisation of feeling as judgement and appreciation 54
Figure 7 Today's official website of Nebraska (homepage - first scroll) 66
Figure 8 Today's official website of Nebraska (homepage - second scroll) 67
Figure 9 Today's official website of Nebraska (homepage - third scroll) 67
Figure 10 Today's official website of Nebraska (interior page - first scroll) 69
Figure 11 Today's official website of Nebraska (interior page - second scroll) 69
Figure 12 Today's official website of Nebraska (interior page - third scroll) 70
Figure 13 Blends in the web hyperdomain 76
Figure 14 EndNote software's homepage 77
Figure 15 Official homepage European Union 79
Figure 16-17 Icons/buttons used to click on an audio file or a video 99
Figure 18 Example of menu bar composed of single word links on the left side of the screen 100
Figure 19 A second interior page from European Community official site 103
Figure 20 A third interior page from European Community official site 103
Figure 21 An example of entry for 'Hypertext' in Wikipedia 106
Figure 22 Google search engine interface within the Microsoft Internet Explorer framework 118
Figure 23 A Horde software screenshot for writing emails
Figure 24 An example of directive act within a pull-down menu in an e-commerce website
Figure 25 Graphic symbols
Figure 26 Home page icons and worded link
Figure 27 US Coca-Cola website
Figure 28 Italian Coca-Cola website
Figure 29 Chinese Coca-Cola website
Figure 30 Example of genre colony
Figure 31 The evolution of cybergenres
Figure 32 The front page of the print version of The New York Times
Figure 33 The homepage of the digital version of The New York Times

LIST OF TABLES

Table 1 Usability improvement
Table 2 Linguistic entropy Vs usability
Table 3 Persuasive and prescriptive verbal markers in the interior page
Table 4 A basic classification of links
Table 5 Adaptation of the classification of links according to Primary Functions
Table 6 Web genres identified by Crowston and Williams
Table 7 Attribute values for the six cybergenres recognised by Shepherd and Watters
Table 8 Parameters of Web genres
## LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDA</td>
<td>Critical Discourse Analysis</td>
</tr>
<tr>
<td>CMC</td>
<td>Computer-Mediated Communication</td>
</tr>
<tr>
<td>CMD</td>
<td>Computer-Mediated Discourse</td>
</tr>
<tr>
<td>CMDA</td>
<td>Computer-Mediated Discourse Analysis</td>
</tr>
<tr>
<td>CMHHC</td>
<td>Computer-Mediated Human-to-Human Communication</td>
</tr>
<tr>
<td>FAQ</td>
<td>Frequently Asked Questions</td>
</tr>
<tr>
<td>GUI</td>
<td>Graphical User Interface</td>
</tr>
<tr>
<td>HCC</td>
<td>Human-to-Computer Communication</td>
</tr>
<tr>
<td>HCI</td>
<td>Human Computer Interaction</td>
</tr>
<tr>
<td>HMI</td>
<td>Human Machine Interaction</td>
</tr>
<tr>
<td>HTML</td>
<td>HyperText Mark-up Language</td>
</tr>
<tr>
<td>HTTP</td>
<td>HyperText Transfer Protocol</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IRC</td>
<td>Internet Relay Chat</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>MUD</td>
<td>Multi-User Dungeon</td>
</tr>
<tr>
<td>OCC Model</td>
<td>Ortony-Clore-Collins Model</td>
</tr>
<tr>
<td>SFL</td>
<td>Systemic-Functional Linguistics</td>
</tr>
<tr>
<td>VR</td>
<td>Virtual Reality</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Mark-up Language</td>
</tr>
</tbody>
</table>
Introduction

Ubiquitous technology, which is definitive of the virtual age, is far more subtle [than computers]. It doesn’t tell us anything. It rearranges our thinking apparatus so that different thinking just is.

(Stone, 1995)

This book aims to explore the nature of Web communication in terms of hypersemiotics, hypermodality and hypertextuality. The net-shaped and multi-coded architecture of information translated into Web discourse practices affects human thinking cognitively, socially and culturally.

We live in the Information Society and most of our communicative exchanges and productions are mediated by digital technology. Mediation and re-mediation have always been mechanisms utilised by humans to interact with the evolution of knowledge and learning and to create new forms of representation. Before the advent of the Internet, these processes held over time and space and made artefacts and practices recognisable within discourse communities.

The problem today is: how can we cope with this endlessly evolving technology that has eliminated time and space constraints? Moving has become the only real or virtual action through which, in the Web community, users interact with technology itself or with other users, establish relationships within any domain of discursive practice, elaborate their texts, artefacts and products. Understanding the relationship between users and technology means to begin to understand how users process online texts.

The hypertext dimension of the Internet and the technologies involved have thus given origin to other forms of textuality that require different frameworks of analysis. Linking mechanisms, embedded in a hypermodal and hypermedial domain, enable users to move within and beyond this semiotic space, becoming cognitive potential and par-
participating in the meaning-making process. The study therefore focuses on the role of language/s and use of language/s in digital communication but, in particular, on the impact the technological affordances have on meaning construction.

In the light of this epoch-making transformation, only some issues here will be broadly explored leaving out others, such as Computer-Mediated Discourse Analysis (CMDA) and multimodality in part, since they have been tackled exhaustively in recent years and we can draw on existing studies integrating them into our investigation.

Chapter 1 begins by exploring the notions of Globalisation and the Information Society in the age of the Internet and how, in this scenario, human communication is affected by this new medium. The question which is immediately posed is whether we, as members of this global society, perceive the difference between the term information and informational where the latter means "the attribute of a specific form of social organization" (Castells, 1996). How are then knowledge and information organised and managed within digital contexts and settings? Computer-mediated communication finds its origin in the traditional theory of communication that cuts across different fields of research. The first model of communication analysed in Chapter 1 is that of the two mathematicians Shannon and Weaver (1949), then that of MacKey's Model of Intentionality (1972). Both converge in models developed by linguists, ethnolinguists and semioticians. In fact, Jakobson's Communication Model (1960), Hymes' SPEAKING Model (1973), Halliday's Functional Model (1973) - but also in text linguistics De Beaugrande and Dressler's analytical framework (1972) - encapsulate the basic pivots of Information Theory demonstrating that all these disciplines share a common terrain.

For many years, verbocentricity has played a primary role in most investigations, although social semiotics and multimodality have pushed towards a comprehensive perspective that include both verbal and non verbal resources. Chapter 2 describes the constituents of modern digital communication and identifies in hypertextuality, multimodality and affective interactivity its specific features. Starting with the assumption that the Web is a huge hypertext, our first step is to sketch its peculiarities, that are multilinearity, nonsequentiality, granularity, connectivity, reticularity, and interactivity. We underline the
change of roles between author and reader and present multimodality using the framework offered by Kress and Van Leeuwen (2001) and by Kress (2010). According to these authors, meaning construction can take place simultaneously by working through different domains of practice that are discourse, design, production and distribution. A message is shaped by a multiple articulation which coordinates all the modes involved and guarantees coherence among domains. The last constituent we explore is affective interactivity: how interactivity, provided by hypertextuality, and the recourse to multiple semiotic resources entail the affective and evaluative sphere of human interpretation.

In Chapter 3 we undertake an in-depth analysis in order to prove the hypothesis that in digital communication there are losses, in terms of linguistic informativity and salience, that are, however, compensated by gains, embedded and rooted in its multimodal and, above all, hypertext nature. The interplay between these two constituents, hypertextuality and multimodality, helps Web communication manage information overload and the impact the latter can create on users. The concept of linguistic entropy is presented together with the notion of usability. This new discipline contributes to the reduction of randomness caused by the high level of entropy in information overabundance and makes information usable, but at the expense of its evaluative salience and informativity which are absolutely essential. In fact, the reduction of randomness occurs thanks to the intervention of multimodality and in particular hypertextuality, as demonstrated by the case study shown in the Chapter. These two facets must be seen in the light of the specific affordances of the medium: the compensatory properties of the Web

Chapter 4 presents these properties that are hypersemiotics, hypermodality and hyperlinking. The prefix hyper- they have in common reflects the compensatory nature and the condition of the Web: being, going, migrating beyond any boundary. Indeed, the first hyper is identified in the Web domain itself where the borders of any microdomain of practice are blended and blurred and where marketisation processes pervade every setting. As a consequence, the boundaries "among different semiotic dimensions of representations" (Iedema, 2003) are merged since processes of re-mediation, involving different
media simultaneously, participate in this resemiotisation, or rather hypersemiotisation, as happens on the Web, e.g. on a portal. Moreover, we examine hypermodality as the conflation of multimodality and hypertextuality because, thanks to links, users can move from one mode to another, from one page to another, and this is possible only by means of the fluidity of the medium. The role of hyperlinks is then strategic and they represent the specificity of the medium. They are no longer seen as technical devices but as meaning potential. They work, in fact, on three levels: syntactic, semantic, and pragmatic. For this reason, the urge to develop a systemic classification of hyperlinks is pressing.

In Chapter 5, we provide a tentative taxonomy of hyperlinks. Our first classifications are the binomial, such as static Vs dynamic, explicit Vs implicit, strongly authored Vs weakly authored, structural Vs associative, procedural Vs textual, with the last being the most interesting because cognitive operations are related to these categories. In general, taxonomies do not offer an exhaustive framework since they do not show the syntactic, semantic, and pragmatic relations hyperlinks establish among nodes. The classification proposed in this chapter sees hyperlinks systematized within other categories which include parameters, such as form, content, function, and rhetoric. The first two focus on the modalities - or modes - through which hyperlinks are represented. Within the verbal class, there can be single-word links or links composed of phrasal items and, in turn, both can be stand-alone or embedded links. The other two parameters are articulated separately. Link functions are classified as textual linking adjunct functions, whereas link rhetoric is classified in terms of the associative value attributed to linkages that can work as metaphors, metonymies, hyperboles, antistasis, identity, and catachresis.

In Chapter 6 we focus on hyperreading, an issue posed at the end of the previous Chapter. We start by drawing a distinction between Computer-Mediated Human-to-Human Communication (CMHHC) and Human-Computer Communication (HCC) and examine the peculiarities of Graphical User Interfaces (GUI) and the role they play in both forms of mediated exchanges. The necessity of redefining literacy in the age of digital communication obliges us to investigate the variables which intervene in the processes of coding and decoding.
digital contents. Web literacy is no longer a matter of being able to read and write, but of conflating the ability to construct meaning hyperertextually by clicking from one node to another (hyperliteracy) and of switching from one mode to another, from one medium to another (multimedia literacy or multiliteracy). In addition, the new affordances offered by this technology enable users to become contemporarily consumers and producers allowing them to download and upload texts. Lastly, Web literacy also entails a global cultural knowledge which enables users to go beyond cultural boundaries and constraints (Lemke, 1998). The Chapter ends by focusing on the consequential processes of glocalisation which prevent local cultures from being totally deleted by globalisation.

In Chapter 7 all the issues we have raised in the previous chapters conflate in the analysis of Web textuality and in a tentative elaboration of specific attributes for Web genres. The first assumption we make here is that, more than in other settings, there is a blurring of genre boundaries on the Web that makes it difficult for scholars to elaborate a precise taxonomy. Variables, such as discourse community, communicative purpose, schematic structure, rhetorical strategies, dynamism, genre colony, hybridisation and so on, are no longer applicable to digital communication or rather they need to be re-thought in the light of digitalisation processes. In real social and professional settings they provide shareable patterns through which we recognise well-defined representations of genres, although their evolution and change is an inherent part of the process. Web genres cannot be entrapped into schemes or categories according to traditional criteria. We propose then a tentative list of more appropriate attributes including parameters such as functionality, prototypical and hyperlinked structure, endless evolution and transformation, hypersemioticity, blurring of boundaries at different scales.
Chapter I

All media are active metaphors in their power to translate experience into new forms. The spoken word was the first technology by which man was able to let go of his environment in order to grasp it in a new way.


Models of Communication in the Age of the Internet

1.1 Globalisation and the Information Society

The medium is the message. What McLuhan stated in 1964 in his Understanding Media. The Extensions of Man mirrors his theory that a medium can affect the society in which it plays a role not only through the content conveyed by the medium, but also by the characteristics of the medium itself. The widespread use of personal computers on one side and of the Internet on the other has provoked significant changes in our daily life from a socio-cultural, economic, political, psychological, cognitive, and, last but not least, a linguistic point of view. Hence, the number of areas involved in this recent social revolution reflects the massive transformation the medium¹ has carried out in one of the pivotal facets of these domains: communication.

Communication cuts across these fields of knowledge. With the Internet being the medium through which information and knowledge are potentially accessible and shareable by all today, it represents de facto the earth's axis of the global world.² The World Wide Web is a huge virtual environment where human beings communicate with

---

¹ Read here as the Computer or the Internet indistinctly.
² Or "global village", as McLuhan defines the world in his previous book The Gutenberg Galaxy: The Making of Typographic Man (1962).
each other without any space and time constraints, thanks to computer mediation.

We should consider ourselves members of this global society that is commonly defined as the Information Society. But the distinction Castells makes between the concepts of "Information Society" and "Informational Society" is worth noting. As the author argues,

\[\ldots\] information is the portion of knowledge that human beings share with one another and it is the foundation of all intellectual and cognitive activities of societies. By contrast, the term Informational indicates the attribute of a specific form of social organisation in which information generation, processing, and transmission become the fundamental sources of productivity and power, because of new technological conditions emerging in this historical period. (Castells, 1996: 21)

Petroni, in her studies, says that

It is impossible to think about the process of globalization independently of the informational revolution and of the spread of the Internet: a global society is a society that thinks, acts and interacts globally, and all these processes have been made possible thanks to the information technology revolution. This allows the accumulation of knowledge to be diffused throughout the world, which in turn generates an increasingly complex system of information management and so on *ad infinitum*. In this context, processing information means generating new knowledge. Of course, the cultural sphere is involved in these changes. In fact, the close link that today exists between culture and productive forces is determined precisely by the existence of a knowledge-based information technology - what Castells defines as "informationalism" - that changes the way in which we produce ideas and contents and how we encode and decode them. (2010: 280)

Social behaviours related to this complex process have very often generated different, and sometimes contradictory, phenomena in digital communication because, on the one hand, there is the need to share an international language and common codes in particular Internet domains. On the other hand, the desire of not being homologated, maintaining our identity and being ensured that information and knowledge can still reflect our Selves through our own language is