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Information, retrieval, discourse and communication

INTRODUCTION

This book is about the indexing of multimedia objects. In the context of this book, the term indexing refers to the representation, in surrogate form, of information about:

- the physical characteristics of the multimedia object (for example, descriptive cataloguing)
- the intellectual characteristics of the multimedia object (for example, subject indexing).

Indexing is generally considered a crucial prerequisite for any effective information retrieval system. We use the term multimedia objects here to refer to a range of media within which information is stored. In this context information is assumed to be material, or in Michael Buckland’s terms, information is treated as ‘information-as-thing’ (1991).

In this book multimedia information retrieval is information retrieval which is used to manage still images, moving images (with and without soundtracks) and sound recordings. The main focus of this book is on concept-based information retrieval which uses text to index and retrieve multimedia objects. Other forms of multimedia information retrieval will be described briefly to provide a perspective of the range of systems.

We believe that it is useful to situate multimedia indexing within a broader context. Our use of the term multimedia suggests that the objects with which we will be concerned are not textual but non-textual objects, yet many of the issues relevant to the indexing of multimedia objects, for example, subject analysis, are issues which are also relevant to textual objects. Our contention is that the issues are similar, but the nature of the communicative medium (for example, photography rather than written language) might result in additional difficulties in the indexing of non-textual objects.
INDEXING MULTIMEDIA AND CREATIVE WORKS

We see indexing itself within the broader context of communication, and in turn, communication sitting within the broader context of human history and society. We believe that reaching an understanding of the issues involved in the indexing of multimedia objects is best done within a broader discussion of communication and culture, and the philosophies of communication and culture.

There are many approaches to multimedia indexing which we believe are limited in their scope because they are built on the assumption that communication is a straightforward process. In this book we hope to demonstrate that the issue is more complicated than this by drawing on models of communication and meaning from the domain of semiotics and communication studies as well as describing and critiquing information retrieval models drawn from the domains of information science and computer science. This first chapter provides the reader with an overview of the range of issues that we believe are of significance in multimedia indexing. Subsections in this chapter will examine the following topics:

- traditional approaches to information retrieval
- information retrieval and subject analysis
- information retrieval and discursive forms
- information retrieval and subjective discourse
- meanings, codes and conventions
- Erwin Panofsky and levels of meaning.

TRADITIONAL APPROACHES TO INFORMATION RETRIEVAL

For many years, librarians and information workers have designed and implemented information retrieval systems to help information seekers find exactly what they are looking for. Information retrieval involves the identification and representation of the information content of and about documents using descriptive and analytical systems which allow specific user requests for information to be matched up with the relevant information source(s). In the retrieval of textual documents the assumption is that the human indexer is able to decode the textual document and construct a representation of the significant information content using the codes and conventions of cataloguing rules and indexing languages, for example classification codes and controlled vocabularies.

Traditionally in libraries, information workers have focused on the document as the information-carrying vehicle. Documents, chiefly books, are organized in libraries on shelves according to subject through the application of appropriate notation derived from a library classification scheme. This practice allows books to be shelved in relative order and facilitates open access policies in libraries.
Catalogues are constructed to record information relating to the physical aspects of the document (descriptive cataloguing, author/title access points), and the intellectual aspects of the document (classification marks as indexing entries, controlled vocabularies).

The traditional process of information storage and retrieval depends upon human indexers and library users making decisions relating to the interpretation of, and representation of, meaning in media objects and indexing languages. These decisions can lead to success or failure in the implementation of the system and/or the subsequent search procedure. The human indexer must accurately describe the physical properties of the document using the appropriate cataloguing rules, and then form access points for author and title searches. How straightforward this part of the process is depends on how easy it is to identify relevant information and transpose it into the form demanded by the cataloguing code.

To subject index the document, the human indexer must first analyse the subject(s) of the document being indexed, and then choose the subject terms from the controlled vocabulary which best represents the subject of the document (the controlled vocabulary will be a standard, published externally or in house, which is often chosen or constructed by someone other than the indexer). To do this, the human indexer must interpret the meaning of the document, and interpret the meaning of terms in the controlled vocabulary.

The library users who seek information can perform an author search or a title search on the catalogue if they already have this information, but if the search is for an unknown item about a particular subject, then the search will take the form of a subject search. Such a search strategy is only possible because it is generally accepted that documents have fairly stable meanings which can be interpreted by readers and can be represented in other forms (cataloguing records, classification marks).

The information seeker has to decide which term in the controlled vocabulary best represents the subject of the information sought, and then hope that the subject of the document as interpreted by the indexer accurately represents the subject of the document as interpreted by the seeker. Thus analysed, it becomes clear that the information retrieval process is a communicative process in which meaning and interpretation are carried out by at least two agents, the object of interpretation having been encoded by at least one other agent, but probably more, given contemporary publishing practices.

The indexing process (Figure 1.1) as it applies to textual objects is considered to be one which needs specialist knowledge to implement successfully. This process has become professionalized in contemporary society. There are a number of textbooks devoted to information retrieval in general (for example, Chowdhury, 1999; Rowley and Farrow, 2000), and to specific aspects of the
INDEXING MULTIMEDIA AND CREATIVE WORKS

The indexer
- Analyses and interprets the meaning of the information object (textual or multimedia object).
- Interprets the codes and conventions of the indexing language.
- Represents the meaning of the information object in the terms of the controlled vocabulary.
- Applies appropriate vocabulary to the information object, enters the indexing terms into the system.

The information seeker
- Approaches the information retrieval system to search for a specific subject.
- Represents the subject sought in conventional linguistic terms.
- Formulates the subject/meaning in the codified terms of the specific indexing language (controlled vocabulary).
- Chooses appropriate indexing term(s) and searches the system.

Figure 1.1 The subject indexing process

process (for example, Hunter, 2002; Langridge, 1989; Piggott, 1988). Computerized information retrieval has made it possible to focus search strategies on specific objects within documents (for example, text retrieval databases which facilitate searches for specific articles within journals, and hypertexts structures which allow access to specific nodes of information), but the principles of the process (analysis – representation – retrieval) are essentially similar.

INFORMATION RETRIEVAL AND SUBJECT ANALYSIS

Conventional information retrieval systems work on the principle that the textual object has meaning which has been encoded within the object by the author(s), and which can be decoded by the reader/indexer. The decoded meaning is assumed to be stable and ‘naturally’ transparent. The same principle works in relation to the indexing language which is also assumed to be ‘naturally’ transparent. Textbooks of librarianship have in the past given students scant advice about how to decode meaning in documents, and about how to deal with the perils of interpretation that lie before them. Derek Langridge, in Subject Analysis (1989), attempted a detailed exploration of the difficulties of establishing meaning of documents, and acknowledged that reading and interpreting meaning
could very often require something more than the mechanistic ‘technical reading’ that Wyner referred to in passing (Wyner, 1980, p. 18). Langridge included many examples of difficult-to-interpret texts to illustrate the potential problems of interpreting meaning and deciding on primary and secondary subjects. The approach he took was to analyse and interpret these texts, thus showing the reader/student how it should be done. What is missing in this approach is the recognition that readers can interpret documents in a variety of ways. It may be that Langridge’s interpretation would not be shared by all other readers who may bring with them different knowledge and different interpretative agendas.

Langridge held that the most obvious philosophical influence on indexing at the time that he was writing was the influence of philosophers whom he labelled ‘the positivists’. He argued that the positivist definition of knowledge is a very narrow one, being limited to science and excluding a large part of written records (Langridge, 1989, p. 20). There are other philosophers who take a broader view about what counts as knowledge, but even those ‘positivists’ who favour a limited use of the term offer other terms such as ‘modes of experience’ or ‘apprehension’ to describe those written records which they do not view as knowledge. Langridge’s point is that:

[t]he fact that the positivists distinguish between the sciences and all else actually supports the view that there are different forms of experience on record, whatever name we use. Since they themselves are only interested in science, their writings can be no help in deciding how many distinct forms there are. (Ibid., p. 21)

There is much more of a debate about whether humans can ever claim that knowledge possessed at any given moment is immutable and absolute than is articulated in Langridge’s treatment of the matter, and the similarities and differences between various epistemological positions in the modern world are not always as clear cut as he suggests. Langridge accepted that like Plato, the ‘positivists’ are concerned with distinguishing ‘true knowledge from belief’ (ibid., p. 22) rather than with the forms that either might take. This issue is of some interest to information management because the information manager must consider the problem of forms in relation to both knowledge and belief because there are ‘written records’ pertaining to both aspects of human culture. These records have to be organized because people may want to retrieve them whether they are ‘true knowledge’ or ‘belief’. Subject coverage in conventional library classification schemes tends to be knowledge-based so that even aesthetic information objects are analysed and described from knowledge-based perspectives. The question that Langridge does not ask but might be of interest to multimedia indexing is whether there are approaches other than the knowledge-based academic discipline orientations of conventional retrieval tools. Could pleasure, ideology, or intertextuality form the bases of new approaches to indexing?
Langridge’s own philosophical preference was for the idealist approach offered by R.G. Collingwood in *Speculum Mentis or, The Map of Knowledge* (1924). He believed that Collingwood’s approach, which involved viewing different disciplines in their own terms because they are all ‘rival ways of conceiving the whole’ (Langridge, 1989, p. 22), and separating disciplines according to their own rules, offered an alternative way for librarians to think about ‘knowledge’ (ibid.). The various ‘forms of knowledge’ are treated as logically distinct because they are ‘the ultimate classes of knowledge beyond which – we can make no further reduction’ (ibid.).

Langridge’s approach to meaning in documents seems to be based on the view that the meaning of the text resides entirely in the text; in other words, there is no recognition that individual interpretations of text might depend on the codes and conventions, the belief systems and world views that the individual reader at a specific historical juncture brings to the text. For Langridge, what the librarian indexer must do is to learn to read, or to decode, in the correct way in order to properly determine the meaning of any given document. Post-structuralist linguists and communication theorists might question whether the process is always quite so straightforward, and whether totally transparent meaning is to be found in all types of documents.

**INFORMATION RETRIEVAL AND DISCURSIVE FORMS**

Many of the traditional information and library studies textbooks of the 1960s and 1970s referred in passing to subject analysis. It may be that the relative neglect of subject analysis is due to the belief on the part of the writers that the subjects of documents are generally easy to determine and to interpret, but this is not necessarily the case for all documents at all times. There are many different types of discourse with different purposes and audiences, and while some types of discourse are constructed with transparency in mind, there are other documents constructed with other motivations. Moreover, discursive forms change over time. Decisions about how transparent or opaque the meaning of a document will be might be chosen freely by the author, or, as in the case of an author such as the imprisoned Italian communist writer, Antonio Gramsci (1971), whose sometimes cryptic writings, smuggled out of prison, were always in danger of falling into the hands of his enemies, such decisions might be imposed by circumstances.

Michel Foucault (1991), in essays such as ‘What is an Author?’ drew attention to the constructed and historically contingent nature of the communicative operations of authorship and textuality. In *The Order of Things* (1970), Foucault argued that each historical age has its own episteme, that is, its own system of
knowledge constituted by recurrent patterns of signs and symbols, ways of speaking and seeing things, which are ascribed with the status of knowledge. The episteme determines what can be known at that moment. Like the notion of the scientific paradigm, each episteme is historically contingent and is dislodged from its position of power by the proceeding episteme. From this perspective, ‘discursive practice’ is a body of ‘anonymous, historical rules’ in and through which ways of seeing and writing and speaking are determined. For our purposes, the notion of determined discourse is of some interest in modelling types of text, which in turn is of interest in mapping textual transparency and opacity in social, political and institutional contexts.

In the contemporary modern world, the academy sets rules, codes and conventions about how scientific writings should be presented which privilege accuracy, proof, evidence, transparency and knowledge. This type of writing is motivated towards the reader, but is often difficult for lay readers to interpret because scholarly conventions demand that writers use professional language or jargon, and demonstrate their familiarity with, and knowledge of, writers within the scholarly tradition. Other types of writing, for example modernist and postmodernist fiction, and poetry, are not so heavily concerned with transparency; indeed, the authorial intention in such writings may be to obscure or complicate meaning: to create the self-consciously ambiguous text.

Linguists, philosophers and literary theorists have long been interested in identifying different types of writing (Figure 1.2). Roland Barthes distinguished between the ‘readerly’ and ‘writerly’ text by which he meant:

- ‘writerly texts’ – texts which invite the reader’s involvement in interpretation
- ‘readerly texts’ – texts in which the writer keeps tight reign on the range of possible interpretations. The text tends to be representational. The reader is positioned as a relatively passive receiver and the text tends towards ‘a’ meaning (Barthes, 1974).

Umberto Eco differentiated between the ‘open’ and the ‘closed’ text (Eco, 1979). The point is that different discourses allow the writer different levels of freedom in establishing transparent meaning/opaque meaning, which in turn impacts on the freedom with which any reader might interpret the text. In a self-consciously wrought opaque text, the range of interpretations might be broad.

**INFORMATION RETRIEVAL AND SUBJECTIVE DISCOURSE**

Traditionally libraries focused on creating and implementing information retrieval systems which were based on rationalist or pragmatic positivist philosophical approaches to epistemology. The great classification creators of the
nineteenth century were particularly interested in the idea that knowledge can be ordered and organized and that there are ‘orders of things’ which classificationists can use to structure their classification schemes. Many of the classificationists of the ‘golden age’ of universal classification schemes believed in an objective, scientific approach to knowledge which was stable and which existed in the first place because of a dependable academic consensus.

Throughout the late twentieth century, the limits of objectivity have been much discussed in western philosophy, particularly by postmodern thinkers who question whether there is any such thing as ‘objective’ information and stable meaning in language. For our purposes it is enough to distinguish between discourses which aspire to objectivity and transparency, and discourses which are not subject to such aspirations. Traditionally, as we have already argued, the library profession have emphasized the management of knowledge-based discourses, rather than discourses of imagination and subjectivity, as the central focus of information retrieval systems. The treatment of fiction in libraries provides some evidence which supports such a view. In Dewey’s Decimal Classification (DDC), fiction is organized using historical and geographical markers. There is no attempt to address the question of subject, of determining what the work of fiction is about. This is not an unreasonable way to deal with fiction if the focus of attention is organizing fiction for literary scholarship, where the fictional work becomes an object of research or criticism, traditionally read through the prism of ‘literary history’. It is not a particularly
useful way to subject index fiction for people who are interested in reading fiction for pleasure.

Establishing the meaning of some sorts of textual information is not always easy, for a variety of reasons, yet library-based information retrieval systems are built on the assumption that consensus about meaning can be reached and that human indexing can be consistent and accurate. Eugene Garfield’s (1979) development of citation indexing as an alternative approach to managing and retrieving information was partly driven by a view that human indexing is often inaccurate and imperfect. Garfield was interested in finding a more accurate and objective way of establishing the relationships between texts and between ideas within texts. Citation indexing is based on the practice of scholarly discourse. It is the convention of the modern academy that scholarly papers contain references to other scholarly papers and research reports which suggests that there is some sort of link between these documents. Citation indexes work by linking up the references between papers. But as we have already seen, different types of discourse follow their own discursive codes and conventions. Scholarly practice such as that expected of scientific writing is not necessarily the rule in other kinds of writing. Even within scholarly practice there are differences in the normative practices of different disciplines.

MEANING, CODES AND CONVENTIONS

Determining the intended meaning of media objects where there is no text to stabilize meaning can pose even more of a problem. The production of textual discourse generally involves following the codes and conventions of the chosen discourse. In writing, this can mean adhering to grammatical and syntactical linguistic rules, choosing the appropriate register, choosing the appropriate textual structures and making decisions about paragraphs, chapters and sub-chapters, verses and other structural forms. The question is whether non-textual forms also work within their own codes and conventions.

Semioticians would argue that codes and conventions provide the framework within which signs have meaning. The individual is born into the specific linguistic, textual, social and ideological codes which structure their society, and although it may be possible to question or reject the societal codes, each individual is constructed, to some degree, through the codes and conventions of society, and the codes and conventions of subgroups operating within that society. The specific nature of that construction and its limits remain matters for debate. There is disagreement about the balance between individual agency and structural determinism and about the possibility of autonomous individuality. In this book it is enough to raise the issue, and to acknowledge that there is no
settled agreement about matters relating to individuality and subjectivity. A radical anti-humanist argument might question the possibility of individual ‘meaning’ and agency at all, arguing instead that the creation of cultural and knowledge-based artefacts and the interpretation of cultural and knowledge-based artefacts are functions of society not of individual imagination.

The Italian semiotician and novelist, Umberto Eco (1976) stressed the importance of conventionality in the construction and maintenance of codes. There are conventions accepted by specific societies at specific historical moments which order and structure meaning within codes: in dress codes, for example, these conventions may cover ‘formal’ and ‘informal’ clothing and may be related to status and class, indeed, some commentators would argue that all codes and conventions are ideologically bound. Semioticians would argue that ‘realism’ in art or literature is essentially a diachronically shifting set of conventions about what kinds of representation are considered to signify the real world, for example, the German neo-realism of Fritz Lang was seen as neo-realistic in relation to earlier cinematic styles, while Stanislavsky’s method acting was a reaction against the stylization of earlier acting styles. Views about ‘realism’ or ‘stylization’ relate to the codes and conventions of culture and aesthetics, not to the natural world or to the real.

There are writers who are interested in the use of semiotics as a micro-analytical method to explore the mechanics of meaning within cultural artefacts such as films, or musical works or, indeed, within novels and poetry, and who are also interested at a macro-level in critical perspectives which attempt to analyse the ways in which culture circulates and operates in contemporary society. Some of these writers and thinkers use Marxist frameworks of analysis through which to examine culture within society. Hodge and Kress’s (1988) social semiotics, for example, is materialist and is orientated towards analysing power relationships manifested in and through communicative practices.

For the Marxist-orientated semiotician, specific societies at particular historical moments construct and maintain codes and conventions relating to all aspects of the ‘superstructure’. Some of these codes and conventions will be relatively autonomous (for example, the operation of the camera to construct specific filmic conventions), and some will be more general, concerned with the maintenance of the broad ideological codes and conventions necessary to support the economic ‘base’. These might include narrative and generic conventions. Using the base/superstructure metaphor offers a framework for analysing the way in which society operates. The base refers to the economic base of society which is made up of the mode of production, that is the forces and relations of production. The superstructure refers to the political, cultural and social institutions, codes and conventions which operate to reproduce, at the level of culture, the economic base. Elements of the superstructure include the
political system, religion, philosophy, morality, art, science, education and library systems.

For Marxist-orientated critical and cultural theorists the codes and conventions which operate within the superstructure are always ideological, that is, they reproduce the stories and ideas through which the ruling class produces its economic dominance at the level of everyday culture. For such thinkers the meaning of a document is always ideological, and the meaning of an individual document can only be determined with reference to the broader codes, conventions and ideologies of the given society within which it was produced, and within which it is consumed.

Ideology is not simply imposed from above and accepted by people without any question, however. For many cultural studies practitioners, the significance of popular cultures and subcultures is that these cultural forms offer space for people to resist and criticize dominant ideologies through the construction of cultural artefacts which have critical meaning encoded within them. The question of making meaning and interpreting meaning in this context becomes almost political. The songs of The Clash and The Manic Street Preachers are obvious examples of cultural artefacts whose meaning is established in the broader context of resisting capitalist ideology. Cultural studies writers have analysed youth subcultures such as the British punk scene in the late 1970s in the same cultural-political terms.

Within any given society there may be a variety of sub-codes and conventions, some of which critique and subvert the dominant codes and conventions. Some cultural commentators use the Gramscian notion of hegemony to describe the relationship between dominant cultural practices and resistant counter-cultural practices. For Gramsci, *hegemony* refers to the way in which dominant ideologies circulate in and through societies with fairly strong social stability, such as British society, to maintain the moral and intellectual leadership of the ruling class. In Gramsci’s model, *counter-hegemonic* subversive ideologies emanating from subordinate classes are also allowed to circulate, at least to a degree that the dominant classes can bear. The Manic Street Preachers may write songs full of subversive left-wing lyrics, but they are also a commercial pop band signed up to EMI, a company which is happy to allow the band to peddle subversive lyrics as long as they continue to make money not only for themselves, but also for the record company.

Viewed from this perspective, the full and complete interpretation of a multimedia object is only possible if the interpreter has an understanding and knowledge of societal and aesthetic codes and conventions which operate at the point of production. Moreover, the reading undertaken by any individual reader will be to some degree determined by the codes and conventions of the society and the historical moment in which the reading is taking place. Theorizing the
interpretive process in such a way enables us to think about the creation and the interpretation of multimedia objects as being similar to the creation and interpretation of textual objects.

Within the literature of structuralist social theory there are a number of studies which use semiotic frameworks of codes and conventions to analyse the operations of a variety of superstructural forms. An early example of studying non-textual codes and conventions can be found in the work of the structuralist anthropologist, Claude Lévi-Strauss, who used the notion of cultural codes and conventions as a framework through which to analyse the food systems of the Murgin people of North Australia in his study *The Raw and the Cooked* (Lévi-Strauss, 1986 [1964]). Elizabeth Wilson’s study of fashion as a modern commodity examined the dress codes which operated in specific subcultures of modern western capitalism at specific historical moments (Wilson, 1985). An earlier fashion-based study is to be found in the work of always innovative philosopher and cultural critic, Roland Barthes, who in 1967 attempted an analysis of the codes and conventions of fashion journalism in his study *The Fashion System* (1985 [1967]).

Music, too, follows its own sets of forms, codes and conventions. Music listeners in western culture have become familiar with the scales and forms of western classical music; however, different cultures have different musical forms. Indian music, for example, is based on its own set of musical scale-modal structures called ‘ragas’, while Indonesian music is based on two main scales, the five-note slendro, and the seven-note pelog. Recently popular music has used the techniques of sampling and mixing to produce new forms constructed from the remixing of older forms. Such techniques oppose the conventional western capitalist traditions of originality and novelty, and bring with them new ways of listening to and interpreting music, as well as forcing debates about intellectual property issues, which in turn forces examination of the societal codes and conventions of capitalist commodification. A recent advertisement on the music television station *Kiss* promoted a disc jockey (DJ) mixing competition by inviting budding DJs to send in their creative and ‘original’ mixes. In this cultural environment the meaning of the term ‘original’ is itself being ‘twisted’.

A number of film theorists have discussed the ‘constructedness’ of film, arguing that the structure and features of film are based on specific codes and conventions created and maintained by generations of film-makers. The argument is that film is not so much a reflection of reality as we experience it in the material world, but the implementation of film codes and conventions so that what we, as filmgoers, identify as verisimilitude is a matter of codes and conventions that we have come to read as ‘real’. Daniel Chandler makes the point that what was considered ‘real’ in silent film is quite different from the ‘real’ in contemporary film (Chandler, 2002, p. 162). Christian Metz (1974) argued that
while filmic codes and conventions are not of the same nature as language, lacking the equivalent of phonemes, the arbitrary sign and the double articulation of language (double articulation refers to the fact that the minimal sign units in language, sounds or letters have differences which give them meaning and these units can be connected together at the level of words to produce units which have difference and meaning in relation to other words), nevertheless, film is discourse with signifying practices. Metz argued that meaning in film comes not from individual units but from the ways in which these units are connected together to form plot order and story order. The process of making a film depends on the selection and combination of images and sounds, and the viewing and interpreting (reading) of photographs and film are, for Metz, learned processes.

**PANOFSKY AND LEVELS OF MEANING**

In the domain of image indexing and retrieval, writers have acknowledged that establishing the meaning of images is a complex business (for example, Brown and Hidderley, 1995; Burke, 1999; Enser, 1993b, 1993c, 1995b; Enser and Cawkell, 1994; Enser and McGregor, 1992; Fidal, 1997; Krause, 1988; Layne, 1994; Rasmussen, 1997; Shatford, 1984, 1986; Shatford-Layne, 1994; Svenonius, 1994). Enser and Burke in particular have referred to Panofsky’s ‘levels of meaning’ model as a way of thinking about the operation of meaning in images. In his essay ‘Iconography and iconology’ (1993 [1955]), the art historian Erwin Panofsky identified different types of meaning in art and constructed a framework of meaning which he then applied to the interpretation of Renaissance art. Panofsky distinguished between three different levels of meaning which are:

1. **Primary or natural subject matter:** which are subdivided into factual and expressional subject matter. This is the pre-iconographical level of art:

   It is apprehended by identifying pure forms that is: certain configurations of line and colour, or certain peculiarly shaped lumps of bronze or stone, as representations of natural objects such as human beings, animals, plants, houses, tools and so forth; by identifying their mutual relations as events; and by perceiving such expressional qualities as the mournful character of a pose or gesture, or the homelike and peaceful atmosphere of an interior. The world of pure forms thus recognised as carriers of primary or natural meanings may be called the world of artistic motifs. (Ibid., p. 53–4)

2. **Secondary or conventional subject matter:** identifying the male figure in the painting with the knife as St Bartholomew (ibid., p. 54). This level of subject matter depends on cultural knowledge and is called the iconographical level of art. The artist would have consciously wanted to depict the specific
character. Panofsky argued that expressional qualities might well be unintentional.

3. **Intrinsic meaning or content**: ‘It is apprehended by ascertaining those underlying principles which reveal the basic attitude of a nation, a period, a class, a religious or philosophical persuasion – qualified by one personality and condensed into one work’ (ibid., p. 55). The compositional and iconographical features are interpreted as more particularized evidence of ‘something else’. This level of meaning depends on the viewer synthesizing information gathered at the first two levels of meaning with additional information which might include information about the artist and the socio-political cultural moment of production. A work of art might be interpreted as evidence of Leonardo’s personality, or ‘of the civilization of the Italian High Renaissance, or a peculiar religious attitude’ (ibid., p. 55). It involves historical, psychological or critical approaches to art. Achieving iconological interpretation depends on having ‘synthetic intuition’, according to Panofsky, an attribute which might be more often found in the talented layperson than the erudite scholar. Where this level of meaning depends on ‘subjective and irrational’ sources it is all the more important that ‘objective’ correctives relating, for example, to documentary sources and history are applied.

Panofsky’s model has been used by information theorists interested in mapping the specificities of meaning in images. Peter Enser (1995b) related Panofsky’s levels of meaning to images in general, arguing that iconography refers to specifics, pre-iconography refers to generics and iconology refers to abstract meaning, while Mary Burke constructed her own version of Panofsky’s table of levels of meaning (1999). Both Burke and Enser emphasize the subjective interpretational aspects of iconological content, but it is worth remembering Panofsky’s own insistence that the more such interpretation is based on individual psychology and ‘*Weltanshauung*’ or world-view, the more crucial it is that objective correctives be applied.

At the first level of meaning, Panofsky wrote about the ‘natural’ subject matter which included expressional content. He assumed that qualities such as mournfulness or homelike atmospheres as represented in art forms are ‘natural’. A critical theory approach would ask whether such qualities are learnt rather than given. Determining such qualities as a viewer might be fairly subjective. A comparative and historical approach to art forms might begin to offer some empirical evidence about whether expressional content is natural or cultural.

Earlier in this chapter it was argued that traditional textbooks of librarianship have often downplayed the complexities of reading texts and establishing the meanings of texts. The adaptation of Panofsky’s model is evidence that as information professionals have had to engage with issues about managing
multimedia documents, so they have become interested in debates about meaning, interpretation and communication. Panofsky's levels of meaning are clearly of some interest but there are other approaches to modelling communication and interpretation. Later in the book we will focus on using semiotics to analyse the mechanics of meaning and communication in multimedia artefacts. In the next chapter we provide an introductory overview to information retrieval in general.