1 What is colour?

1.1 Introduction

Our world is full of natural colour. Against background swathes of blue sky, yellow sand, green grass and white snow, we prize the startling hues of flowers, fruit, feathers and gemstones. Yet this is not enough for us. Most human societies strive to produce their own colours, namely, dyes and paints of the greatest possible variety. A Palaeolithic cave artist depicting familiar animals, and a modern British home-owner agonizing over the perfect colour-scheme for the living-room, are both exhibiting the same delight in colour, and the same need to adapt it to their own social, cultural and individual requirements.

To say that colour plays multiple roles in human society is a gross understatement. It is everywhere in our lives, sometimes boringly dull and at other times brilliantly eye-catching. It is often taken for granted, yet it also conveys vital messages, as in traffic lights or electrical wiring. It can even signify and engender loyalties and hatreds that influence human history, as in heraldry, uniforms and flags. Since it pervades every aspect of human life, it might be considered essential for our languages to express colour concepts clearly, accurately and in a way that is easily communicable. Yet, when the colour vocabularies of various languages are considered and compared, the researcher finds that there are many different ways in which humans categorize and 'label' colours, resulting in an amazing array of misunderstandings. Monoglot individuals invariably believe that their own colour system is clear and obvious, and they are often mystified when confronted with an alternative system. So the first step which the reader has to take when entering the world of colour semantics is probably the most difficult of all; s/he must restrict his or her own colour system to normal, everyday speech, and learn to set it aside when considering foreign or historical colour descriptions. The aim is to dispose of any preconceptions about how colour 'should' be classified and described, so as to gain insights into the workings of other languages and cultures, and into the nature of colour itself.

The first problem which must be addressed is the word *colour*. If asked to name some colours, the chances are that any English speaker will list words

such as *red*, *blue*, *green*, *purple* and so on, but, technically speaking, these denote varieties of only one element of colour, which is called *hue*. In many modern societies, most speakers will interpret the word *colour* or its equivalent, as indicating only hue, but the reader should not assume that all other societies do the same, or did the same in the past, or, indeed, that all societies have a word translatable as 'colour' at all (Wierzbicka 2006: 1–4). A society may be concerned, for example, with the general *appearance* of an entity, involving a mixture of visible features in which hue cannot be separated from one or more other aspects such as shininess, roughness, darkness, wetness and more, in varying combinations. Even more surprising to the English speaker and others is that the so-called 'colour terms' of a language may include *non-visible* elements which cannot be excised from the overall meaning of the word or phrase (Section 1.7).

Certain elements of colour would be much more accurately and fully described by a physicist or vision scientist, but this chapter will aim to present them from the viewpoint of linguistics. A colour impression is composed of many elements, and human societies unconsciously combine them in various ways, and label them with language in order to convey an image to members of the same speech community. While this statement suggests a kaleidoscope of different colour impressions, there also appear to be certain fundamentals in colour-naming which many would argue are universal among human societies, but more of this later. This present chapter aims to introduce the various features which can be observed in colour systems around the world, and it is hoped that this will help readers to understand how their own colour system is simply one possibility among many.

The exact nature of the colours we see is the result of a complicated interaction between the physics of light, the physiology of the human eye, environmental conditions at the time of viewing, the physical properties of the object being viewed and the way in which our brains receive and interpret all this information. In other words, for each viewing, there is a huge number of possible combinations involving phenomena such as illumination, reflectivity, surface texture and many more. In this book, however, the crucial aspect is not the physics and physiology, but the brain's interpretation of the data it receives. With admirable boldness, the human brain adopts a 'no nonsense' approach to the flood of information it receives from the eye, and it simplifies and classifies, so humans can cope with the complexity of their world. This simplification can be glimpsed through language.

Although the various colour vocabularies in the world differ considerably in their details, they most often make use of one or more of four principal phenomena: hue, saturation, tone and brightness. Unfortunately, I have to pause at this point and warn the reader about the terminology of colour semantics. The subject does not yet have a truly standardized terminology and, for certain

phenomena, the variety of terms which can be found in published works is amazing. To give one example, saturation is also known as chroma, intensity, concentration, purity and probably more. Worse than this, the same terms are often used by different authors to denote different phenomena (Biggam 2007). In these circumstances, and until there is general agreement, it is essential for writers on the semantics of colour to make clear their own usage at the outset, and to avoid straying from those definitions.[1] My own usage of the four crucial terms, *hue, saturation, tone* and *brightness*, now follows.[2]

1.2 Hue

Of the four principal constituent parts of colour that are significant in linguistic studies, *hue*, or *chromatic colour*, is probably the easiest term for the English speaker to understand. It refers to the spectrum of visible light, parts of which, according to their wavelength or frequency, are perceived by humans to differ from others. The classic natural example of part of the hue spectrum is the rainbow, and its various hues are called *colours* in non-technical English. Examples of English hue vocabulary include *blue*, *red* and *yellow*. (See Appendix 1.1.)

1.3 Saturation

Turning to *saturation*, this term refers to the purity or otherwise of a hue, in relation to the amount of grey it is perceived to contain. If increasing amounts of grey are successively added to samples of a hue, this creates a range running from a vivid hue (no grey at all) to grey (no hue at all). Thus, to take the example of red, its saturation range will start with a fully saturated red which has no admixture of grey. This can be described in everyday language as *vivid red* or, more commonly, but highly ambiguously, as *bright red* (Section 1.5). The reader should then imagine a range of colours composed of the same red but with increasing amounts of grey added to it. The red becomes duller along the range as the greyness element increases until, finally, the colour is simply grey, as the red element ceases to be perceived. Before this point in the range is reached, the colours could be described as *dull red*, *grey-red* or even *dirty red*. Using *colour* in its technical sense, it can now be seen that there are colour words which are saturation terms rather than hue terms, and the English words *vivid* and *dull* (as used in the context of colour) are, of course, two examples; they refer to degrees of saturation without specifying hue. (See Appendix 1.2.)

The reader is invited to imagine a hypothetical language in which the roles of saturation and hue, as seen in English semantics, are reversed so that the difference between red and blue is unimportant, but the differences between vivid red and dull red, or between vivid blue and dull blue are highly significant. The vivid hues may be considered prestigious, and be individually named, but

the dull hues may be of little interest and may be all designated by only one or two words. This is the sort of colour classification that speakers of many other languages may struggle to understand. To avoid overlooking a classification which is alien to him or her, the researcher into colour semantics needs to keep an open mind, and awareness of the various features of colour can help in this.

1.4 Tone

The next element of colour to be considered is denoted here by the word *tone*. This refers to the admixture of white or black with a hue, creating a range which runs from pale at one end to dark at the other. Taking blue as the example hue this time, the blue tone range runs from very pale blue through shades with successively increasing amounts of blue added to them, so that they range from very pale blues to pale blues to palish blues to fully saturated blue (in which no white is perceived). At this point, the blue tone range begins to add successively increasing amounts of black, resulting in darkish blues, dark blues and very dark blues.

The English words *pale* and *dark* are tonal colour words, and, just like *vivid* and *dull*, they are unspecific as to hue. The English-speaking reader can now attempt to imagine a hypothetical system in which tone plays a stronger role than hue. Such a language would consider the difference between paleness and darkness to be more important than the differences between hues. Its speakers may, for example, have several terms for aspects of paleness and darkness but be unable to distinguish linguistically between pale blue and pale green, or between dark blue and dark green, without launching into a descriptive phrase. They would, however, have no problems in distinguishing linguistically between pale blue/green and dark blue/green.[3]

There is also a special tone range for the achromatic colours. *Achromatic* means literally ‘without hue’, and it refers to white, black and the greys. The achromatic tone range, therefore, runs from white through very pale greys to pale greys to palish greys to darkish greys to dark greys to very dark greys and, finally, to black. (See Appendix 1.3.)

1.5 Brightness

Brightness is a word which has been used particularly ambiguously in colour studies (Biggam 2007). It is concerned with the amount of light reaching the eye, but the nature and sources of such light are varied. An object may be bright because it is pale and well-lit, or because its surface is made of a reflective material, or because it is itself a light source such as a lamp. The metalanguage used in this book for the various aspects of brightness is described in Section 8.6, and summarized in Appendix 1.4. Where sufficient information exists, a

colour description in this book will specify the type of brightness involved, using the suggested terminology. In many cases, however, it is not possible to be precise about the nature of the light, so the words *bright* or *brightness* will be used as unspecific descriptions.

In Present-Day English (PDE), a fully saturated hue is often referred to as *bright*, as in *bright green*, for example, even though the effect is not truly dazzling like a flame. In this sense of *bright*, the eye-catching nature of true brightness is used metaphorically of vivid hues. *Bright* and *brightness* will never be used in this sense in this book, unless in a quotation, but will be replaced by the words *vivid* and *vividness* or the phrases *fully saturated* and *full saturation*.

The last mental exercise for the reader is to imagine a language in which brightness is of far greater significance than hue. This language may have very few basic hue words at all, but may interpret all colour impressions through the crucial contrast of brightness versus darkness, as in daytime versus night-time. The speakers of such a language may depend heavily on daylight, relying on it for hunting, gathering food, avoiding danger, travelling and manufacturing. They are likely to have only limited light-sources at night-time. Small wonder they may have a greater interest in this brightness contrast than in naming the hues.

1.6 Other aspects of appearance

In the sections above, the reader has been asked to imagine colour systems which may seem strange to him or her, namely, systems in which saturation, tone or brightness predominate over hue. There are also languages in which two or more of these colour elements have *equal* importance, forming a network of combinations which may mystify the English-speaking researcher who is looking for a guiding principle in the use of that colour system. In other words, it may be that no single colour element predominates at all (see Hanunóo in Section 4.5).

Even more difficult for our researcher to comprehend is the active inclusion in a colour system of a visible feature which s/he does not normally consider an element of colour at all. A language, for example, may include a phenomenon such as surface texture in its colour system. To most English speakers, the smoothness, roughness, lumpiness or prickliness of an object (to name but a few such features) has nothing to do with colour, but a moment's glance at surrounding items will show that all sorts of surface textures affect a colour impression (see Yucatec in Section 4.5). These aspects of surface texture constitute features of the object's formation, whereas the light-reflectivity mentioned in Section 1.5, although clearly requiring a shiny surface, is concerned with the dazzling effect of what is reflected. This distinction, however, may not be

appropriate for some languages, and researchers need to be guided by their findings, and to avoid jumping to conclusions.

This section does not refer to the *unrestricted* use of colour terms with any surface texture. For example, one can say in English 'a shiny grey floor' but this does not imply that whenever *grey* is used, it *must* describe something shiny. English speakers know that *grey* can be used of *non*-shiny things too, in fact, it can be used independently, with or without any surface feature. On the contrary, this section refers to languages in which a colour word *always* includes a particular feature of appearance so that, if Word X indicates 'grey and shiny', speakers of such a language will need a different word, Word Y, to indicate 'grey and non-shiny'.

1.7 Non-appearance aspects

For those who use a hue-based colour vocabulary, the idea of a colour word which cannot be used separately from a feature of surface texture is difficult to comprehend but, even more difficult, are features of colour words which do not refer to appearance at all, and so cannot be indicated on a colour chart even where their presence is crucial to the word's meaning. Such features are extremely varied and include, for example, dryness and edibility, and the researcher needs to understand a society which speaks such a language in order to be aware of these features.

Non-appearance elements of colour terms are closely related to colour symbolism, which is a familiar phenomenon to English speakers. The word *blue* has the connotation of sadness in certain contexts, and *white* can indicate purity but, similar to the discussion in Section 1.6, these connotations are not *always* present when English *blue* and *white* are used. In some languages, however, non-appearance aspects are indissolubly linked with colour aspects in particular terms, and the former may dominate the word's semantics to the extent that considerations of appearance are secondary. This can result in cases where an object seems to have been described with the 'wrong' colour term, because *visible* aspects of appearance have been overriden (see Hanunóo in Section 4.5).

1.8 Explanation

It is important to stress that I am not suggesting that societies base their colour vocabulary on scientifically defined constituents of colour such as tone and saturation, nor that any human, in everyday speech, analyses colour scientifically before speaking about it. The linguistically significant elements of colour are presented here to help readers look objectively at their own colour systems, and to be aware of alternative ways of classifying and labelling colour. Thus,

when faced with an unfamiliar system, the researcher has a better chance of unravelling its mysteries.

The investigation of features such as hue, saturation and brightness in colour semantics has been criticized by, for example, Lucy (1992: 155). He argues that this analysis is appropriate to some languages, but has been used as a 'measuring stick' for the investigation of *all* languages. He writes: 'The entire approach guarantees that one will not find interesting and truly novel category differences, for one can only encompass descriptively (or measure quantitatively) what the metalanguage allows.'[4] This is a valid concern where a language's colour vocabulary is studied exclusively from the point of view of hue, saturation and brightness, but I would certainly not recommend such a methodology in isolation. It is perfectly reasonable to ask whether a language shows a particular interest in, for example, dark colours or vivid hues, and to investigate why this should be so, but such concerns need not exclude the various and complex contexts in which the terms are used. The researcher could consider whether darkness terms happen also to be used of large, prickly or wet objects (to name but a few possibilities) or whether they only occur in the context of religious ceremonies or industrial processes (again, to name but a few possibilities). As much detail as possible should be recorded about the context of each occurrence of a colour term, and this requirement may cause the researcher to be concerned with matters such as the age, sex and social position of both speaker and listener, details of the environment, type of event and social mood of each occasion of use and much more valuable data.

1.9 Summary

This first chapter has three main purposes. Firstly, it aims to convey the clear message that colour is more than hue. Secondly, it stresses the need for controlled language in the discussion and description of colour vocabulary in order to avoid misleading ambiguities and, thirdly, it aims to demonstrate to the reader that his or her own colour system is not the only possible way to categorize colours. The first point, regarding colour involving more than hue, has been addressed in introductory form in Sections 1.2 to 1.7. The second point, regarding controlled language, leads me to establish some ground-rules for myself. In this book, the reader will find a (hopefully) systematic use of the terms *hue(s)*, *colour(s)* and *appearance*. *Hue(s)* will be used to denote hues only (Section 1.2), and *achromatics* will be used to denote black, white and grey. *Colour(s)* will be used as an 'umbrella term' wherever hues are not involved in a colour statement, or where both hues and other elements of colour are involved. In practice, this means that *colour* is used frequently, most often indicating hues plus achromatics. *Appearance* will be used for visible features other than hue, saturation, tone or brightness (Section 1.6).[5]

The third point made in this chapter, regarding the fact that the reader's colour system is only one among many, is absolutely crucial. There are many other equally valid classifications apart from our own, and glib assumptions about the meaning of colour words used in languages and societies of which we have little in-depth knowledge are unlikely to be enlightening. It is hoped that examples of 'exotic' colour expressions presented later in this book will make this clear. It is necessary to gain a facility for open-mindedness on colour matters, or many foreign and historical usages will be misinterpreted, certain literary passages will not be appreciated as they were intended and the cultural significance of certain colours will be missed.

2 What is colour semantics?

2.1 Introduction

The academic discipline concerned with the expression and elucidation of meaning in language is semantics. Languages communicate meaning in various ways, making use of a wide range of linguistic features such as sounds, words, phrases and sentences.[1] Certain areas of linguistics, such as the study of sounds (phonology) and of sentence construction (syntax) are well defined, but semantics does not have such clear limits. The semanticist needs not only a broad knowledge of the various sub-fields of linguistic enquiry, but s/he will also benefit from an understanding of other disciplines such as anthropology, psychology and philosophy. Specialists in these, and other fields, have made valuable contributions which the semanticist cannot afford to ignore, but the historical emphasis of this particular book unavoidably results in a concentration on textual studies.

This book is, of course, concerned with *colour* semantics, that is, the means by which languages communicate the types of visual impression described in Chapter 1. Its principal aim is to tackle the question of how such information can be retrieved from past societies but it may seem to the reader that consulting an appropriate dictionary is sufficient to answer such queries. Since the most important semantic area for this present study is *lexical* semantics, that is, the study of meaning as conveyed by words and phrases, understanding both the benefits and limitations of dictionaries is crucial, and will be discussed in the following section. This will be followed in turn by a brief consideration of the development of colour semantics, as illustrated by the work of a few selected important contributors to the subject, showing the steadily improving research behind the dictionary definitions.

2.2 Dictionaries and their uses

A concise or pocket dictionary may offer one or two words as definitions or translations of the word under investigation, and this should suffice to give a general impression of its meaning. If, on the other hand, a large multi-volume

dictionary is consulted, the meaning(s) of a word will be presented in the form of a list of senses, beginning with the most commonly encountered one in everyday use, or with the earliest attested meaning in the records. To give one example, if a French speaker were to look up the English equivalent of French *jaune* in a small dictionary, s/he would find the translation 'yellow', and, perhaps, nothing more. Does that mean that our French speaker can now use English *yellow* like a native English speaker? Not at all. If, for example, s/he looked up *yellow* in the *Oxford English Dictionary* (*OED*), s/he would find that certain types of *person* can be described as 'yellow' in English, even though they do not look truly yellow. Such people include the elderly, the sick and members of certain Asian groups. Even further removed from this colour are people who are considered to be jealous, or cowardly, yet an English speaker can describe them too as 'yellow'. Most surprising of all to our imaginary French speaker, and also to many native speakers of English, will be the use of *yellow* to mean 'naval captains retired as rear admirals in H. M. Fleet without being attached to a particular squadron' (*OED*, adjectival sense 1e). English is not unusual in having multiple senses for a single colour term and, if an English speaker were to look up *jaune* in a large French dictionary, s/he would find that it too has various senses, but not necessarily the same as those of *yellow*.[2]

The larger dictionaries, therefore, reveal the multiple roles of certain colour words, pointing out any regional, chronological and contextual restrictions on each function and, in the process, illustrating how they operate within a particular cultural context which may not be obvious to a person from a different culture. The problem for language learners is that the minor senses of a word may affect its more common usage in such a subtle manner that even the native speaker may be unaware of the effect. Poets often make use of these subtle under-senses, by playing on, for example, the English speaker's association of yellowness with sickness and rotting things. To sum up, it is evident that finding a closely equivalent word in a foreign language may prove problematic, as there is unlikely to be a simple one-to-one translation without complications. Semantic studies attempt to investigate the detailed web of meaning, and thereby reduce omissions and misunderstandings.

The reader may be thinking that s/he can manage perfectly well with the smaller dictionaries which usually only present the principal sense of the head-word; for example, '**jaune** yellow' in a French–English pocket dictionary. For some colours, some words, and some languages, this will be fine but, in other cases, this policy will fail. If, for example, an English speaker needs to know the Welsh word for the colour green, s/he will find two candidates in a medium-sized English–Welsh dictionary: *gwyrdd* and *glas*. S/he may wonder which to use, and proceed to investigate each Welsh word in a Welsh–English dictionary. When s/he looks up *glas*, s/he may find, to her surprise, the following English definition: '1. blue; 2. pale; 3. grey; 4. green; 5. young, raw; silver