Any model of reading must take into account the role of the language system in reading. Readers' subjectivities and the reading position taken up in a text can be explicated by demonstrating how texts function in context and how readers function in social situations to construct possible meanings. Components of this model include text and context and their interaction, readers with their social and cultural capital, and the language system. The last element consists of the potential for meaning that the reader is both using and building up. A focus on the system enables the teacher and learner to clarify the constructedness of text so as to enable the reader to deconstruct it and to accept or resist it. The teacher's role is to amplify the context and to make the system more visible to readers so as to scaffold their ability to read critically. Several texts that illustrate aspects of the model are attached. (Contain 16 references.) (Author/RS)
'Fun with Dick and Jane': a systemic-functional approach to reading.
Abstract: This paper argues that any model of reading must take into account the role of the language system in reading. Readers' subjectivities and the reading position taken up in a text can be explicated by demonstrating how texts function in context and how readers function in social situations to construct possible meanings. The components of a reading model are outlined, including text and context and their interaction, readers with their social and cultural capital, and the language system. The last element consists of the potential for meaning that the reader is both using and building up. A focus on the system enables the teacher and learner to clarify the constructedness of text so as to enable the reader to deconstruct it and to accept or resist it. The teacher's role is to amplify the context and to make the system more visible to readers so as to scaffold their ability to read critically.

1. Reading: the need to understand the role of the language system

A reader, like a listener, is faced with the task of constructing meaning from a text. We might say that the task for both is much the same: the reader has certain resources, the text has certain characteristics, and both are constrained by and working within a social context. These are well known factors in the reading process. However, if I had begun this paper with a statement, such as:

'Buenas tardes, amigos. Como le va?'

you might have had difficulty in constructing much meaning at all, unless you are a Spanish speaker. The context of this text and your own resources as an English speaker (with more help from the resources of Italian) may have helped you gain the impression that I was addressing you as friends (after all 'amigos' is fairly well known). But to get any fuller meaning you would need to be able to use the resources of the Spanish language.

These resources are the resources of the language system, the other, less visible factor in the reading situation. In particular, the language system involves an understanding of how the strata of semantics (meaning), lexico-grammar (wording) and phonology/graphology (sounding) all work together to make the text work. All reading involves the use of the language system as a crucial aspect of the task, but the system is often omitted or taken for granted in accounts of reading. One of the great strengths of a functional educational linguistics has been to draw our attention to this system and its role in literacy. While psycholinguistic descriptions of reading such as
Goodman's have taken the language system more seriously than most, they have had to use a formal model of language derived from Chomsky's approach to linguistics, which focussed on the sentence, using syntax as its basis, and which had very little to say about how meaning is constructed in language.

In the psycholinguistic models (e.g. Goodman, Watson & Burke, 1987; Smith, 1982) readers are seen as bringing to the reading task their world knowledge and their language knowledge, both of which are used in reading. These are important insights, and have advanced our understanding of reading beyond the traditional model where meaning is something to be extracted from the text. Nevertheless there is an assumption that all readings are equally valued and equally significant, with a sense of relativity about the reader's 'response' to text. What we now need to be able to show is how the reader's experience of the world and of language has come about and how both function in the reading task. While all of our experiences as readers differ, these experiences are socially constructed and constrained. Further, differences between individuals can be misleading since our development in a social environment produces not a set of separated individuals but people whose experience has been similar and thus results in shared attitudes and knowledges, not totally separate characteristics. Such shared experience can be seen in people's class, ethnic, age and gender positions. Finally, we must be able to show how it is that text itself can position a reader, through its tendency to appeal to dominant discourses (of class, race, generation and gender) which conceal their own premises and appeal to the status quo, the powerful position of those who control social life. We need to be able to show how texts actually work to make meaning, and how readers can be empowered to resist or, if they decide to do so, to accept a reading position because they can see that it is in their own interests to do so.

If we are to demonstrate how readers' subjectivity is a significant factor in reading we need to move beyond a psycholinguistic model to a sociosemiotic approach. Now that we have available a functional understanding of language that is seen in the Hallidayan model, and some insights from semiotics seen from a poststructuralist viewpoint, we are able to develop our understanding of the way readers use language to make meaning in reading much more easily. In this way it will be possible to give a fuller account of the reading process, and to point out the implications for teaching reading at all levels.

An example of how control of the language system is needed for effective reading may be seen when we consider the demands made on readers by texts used in the sciences, the social sciences and the humanities, and typical of those used at school. Martin (1988) has shown that these texts use a 'Secret English' to get their message across. By this is meant the marked tendency for written language to rely on features of
English grammar that are not at all evident in everyday speech, which in turn uses the language of common sense and homely contexts. It is the language of written texts that readers must learn to use if they are to be effective readers. One example is this sort of text, a report likely to be used in science, where technical terms predominate (in bold face):

("Whales" - from J. R. Martin, "Technology, bureaucracy and schooling", Dept of Linguistics, University of Sydney)

Another example is a text more typical of the social sciences, also a report. Here technical terms (underlined) also predominate, but there are also many abstract expressions, also nouns, but nouns used where in everyday discourse we would use verbs. That is, they are nominalisations (bold face):

(JRM, source as above, "Inflation")

Finally, here is a text that may occur in the humanities, a historical recount:

(JRM, source as above, "The breakout")

We will examine how these sorts of texts make specific linguistic demands on the reader. We can demonstrate how the essential factors that are involved in reading them are fourfold: the reader, text features, social context - and the language system. It is the recognition and description of how all these four aspects work together in the reading process, in the practice of reading, that must now be considered so as to provide a more adequate model of reading and of English teaching.

2. Traditional or popular approaches to reading

a. Psychological models

Many of these accounts of reading, and particularly of learning to read, set up simple models of individual readers and a text, and assume that authors present an intended meaning in the text and that the task of the reader is to find out what these intentions are. Quite aside from the possible fallacy of assuming that the author has an intention, whatever that may be, these models give very little guidance for teachers in helping readers negotiate this mysterious pathway. As well, it is quite misleading to assume that the reader is an isolated individual unaffected by social factors and that the text stands alone and is not a product of social and cultural forces.

Other models suggest that reading is very closely related to listening, and that the task is to decode the text to sound, 'sounding it out' so that the reader can 'hear' the
spoken words which are familiar in everyone's experience and thus construct meaning
directly from the text. This overlooks the essential differences between spoken and
written texts, and the approach is further weakened by the concepts involved in the
activities recommended by adherents of 'phonics', tasks which commonly are not
based on an accurate account of the relationship between sounds and the written text.

b. Literary models

Teachers of older readers often use a model of reading based on studies of
literature and literary theory. A prominent example is the reader-response approach,
and the similar tactical reading model, emphasising the freedom of the reader in making
any response to the text that arises from their own experience. When readings are
related to the needs or concerns of the reader, when it is believed that any reading is
meaningful, then we find that readers at school are likely to be vulnerable because their
reading may not match up with that of teachers (and external examinations). The
pressure to come up with a canonical reading, one that is socially approved in the
school context, or elsewhere, is very evident, although implicit, and it means that only
the students from an enriched background are likely to meet the hidden requirements.
While it is true that every reading of a text must have some validity in some situation it
is not the case that it will be valid in every situation. Such reading practices conceal the
actual ways in which texts function to make meaning, the very textuality of texts which
operates through the genre and the language system.

Thus it is only through an understanding of the role of the language system, as
well as generic and discursive patterning, that we can help readers come to terms with
the meaning making practices of texts so that they can then be analysed and critiqued.
Without this understanding readers will passively be positioned by this particular
approach to reading, and thus disempowered when it comes to the ability to even gain
access to the conventional reading, to say nothing of going beyond it through an
understanding of how alternative, possible readings can be made. (For a fuller
explanation of this argument, see Anne Cranny-Francis's Narrative genres: strategies
for resistance and change in this volume.)

Conclusion: some major problem areas in reading beliefs and practice.
• Textual and linguistic transparency: both of these approaches, which seem to
  encompass a wide range of teaching practices, take the operation of the language and
  social system for granted in reading. They do not give any significant account of how
  the language system functions to make meaning in texts, and thus disempower readers
  in the task of coming to terms with texts' reading positions and the discourses operating
  in them. For readers and their teachers, language is rather like a pane of glass,
  transparent, and therefore not something that is significant in reading practice.
Individualism: these approaches are unlikely to be able to situate readers and texts in the social and cultural matrix which provides an essential framework for reading. They assume that social factors, including ideologies of gender and class, are of minimal relevance to reading practice. Once again they are not capable of giving an account of how texts position readers and of how readers can become aware of these textual practices of meaning making.

Meaning making: a feature of these reading pedagogies is that they assume that meaning making is an aspect of the task that lies in the hands of the reader alone, often isolated from the wider socio-cultural environment of both reader and texts. We tend to think of meaning as though it is identical to psychologically constructed notions like 'concept' or 'proposition', and that the reader has an individual, personal store of these that are brought to the reading task. But, as Weedon (1987, 41) has pointed out, 'meanings do not exist prior to their articulation in language, and language is always socially and historically located in discourses'. When we consider meaning making it is essential to take into account the essentially social nature of the language system, of which meaning is a part, and of the fact that language predates and exists in the culture, including but going beyond the experience of any individual (although each individual's texts fractionally contribute to change in the system, over time). The language system, from a functional and sociosemiotic perspective, has developed over the millennia in social situations to allow people to exchange meaning within these social contexts. Some recent trends towards individualism and the solitary 'voice' have made us lose sight of this essential feature of language.

3. A model of reading that takes functional language seriously

It is now more widely accepted that what is involved in reading is the construction of meaning from written texts. So it seems that we could characterise it as the act of interpretation of text. What is important is to note the aspects or variables that need to be described to give an adequate account of it. These aspects we have seen include:

- Reader
- Text
- Context
- Language

all working to construct meaning.

How are these related? A model that sketches this relationship may look like this:
In this framework the interaction between text and context is the means the reader has, using the language system, for constructing meaning. The reader, of course, comes to the text with a history and a subject position deriving from experience of discourses embodied in the experience of other texts, both written and spoken. To some extent, such a discursive history will be unique for each individual, although there will be considerable commonality between individuals, and there will be distinctive positions occupied by groups of readers according to gender, class, age and ethnicity.

All texts are constructed in a context and all readers reconstruct texts in a context, the context of reconstruction being more or less different according to the circumstances of the reader. Many readings of literary texts take place in contexts far removed in time and space from their context of production, and so readers can only work from the cues internal to the text to set up its context. The same applies to many written texts, because they are bound to be removed from the context of their production. The essential question is - what are the features of context that enable a reader to interpret a text?

There are two aspects of context that must be considered, the broader context of the culture and the more specific context of situation. The cultural context, consisting of the knowledges, values and practices of groups within the society, is the source of ideologies and of social and individual purposes that we hold to be important. It is here that the genres, the purposive patterns of behaviour realised in language, emerge and change. This context constrains and affects the numerous and more specific contexts of situation which are evident within the broader framework of family life, at work, in leisure pursuits and so on. The Hallidayan model of register describes these situations in terms of three variables, field (what's going on), tenor (who's involved), and mode (role of language, including channel of communication). All directly affect the construction of text and its reconstruction in reading.

It can be seen that the reader's task is to reconstruct the context of culture and situation, using inference and prediction as essential strategies. Other texts are also part of the context, as the important notion of 'intertextuality' shows. The text below is one from everyday life and is 'read' routinely by many adults.
What factors of context are needed to do this? In the culture of western, urban, industrial democracies car ownership occupies an important part and so social consequences of car use emerge and become important at the level of protection of 'third parties'. This genre is used in the institution of commerce and in particular in insurance, and so the structure of this text functions to incorporate the information needed to effect insurance. In this case the insurer is seeking my business, so includes the enticement to a discount, but the rest of the text sets out information about the insurer, the details of my car, and the charge, in a structure that flows from top of page down. The purpose is to convince me that this insurer is competent to provide what I need.

At the register level the field is car insurance, for third party injury, as seen in features like 'premium', 'due date', and 'liable' as well as more complex nominal groups - 'Compulsory third party personal injury insurance' and 'vehicle registration certificate'. The tenor is free of affect, being that of authoritative business firm offering business to a customer, as seen in the declaratives ('is payable', 'takes effect'), while the mode is written and removed from face to face communication. These features of the register must be appreciated by the reader if the text is to be understood, and it is clear that there are many aspects of the culture of commerce and of insurance that it takes for granted. It is not surprising to note that there are many problems in this text for young readers and for some adult second language readers, particularly those unused to urban social life. While an individual reader may lack knowledge of these aspects of insurance, the knowledges are socially constructed and accessible within our culture. It is this field knowledge that the reader may need help with, as well as other register variables, if they are to interpret it properly and be able to use the text adequately. For a number of examples of texts' register features and how we 'read' them, see Halliday (1985, p. 170).

The text does not stand alone, however, but comes from a context of its own and is related to other texts on which it is dependent - just as one lesson in a sequence depends for its meaning on the lessons that have gone before it. Anyone who has seen other insurance documents, perhaps for life insurance, will quickly adapt to this one, because the other texts are of the same genre and register. This notion of intertextuality is an indication of the language context of any texts we read. Consider the texts that are presupposed by or taken up in the following.

"CHAPTER ONE" Text (from Kress, 1986)

Here we see an example of gendered discourse in a text that is easily recognised as a Mill and Boon romance. Evidence for this discourse is found in lexical items like 'trim waist', 'embarrassment' and the detailed reference to the nurse's attention to her
appearance - 'hairclip', 'frilly cap' and 'honey-blonde curls'. None of this information is provided in the case of the male participants in the text, who are presented within the framework of the intersecting discourse of medicine. The reader must be able to take into account the other texts that deal with medical practice, often popular ones including TV soaps, and also texts which present women and men in varying but patterned ways according to social beliefs (ideologies) about the 'right' types of behaviour for each. Many of the latter texts will first be encountered by younger readers at school, where it has been shown (Baker & Freebody, 1989) that very restricted stereotypes of class and gender are presented.

Once we have understood the role of context in the reconstruction of meaning in reading, we can then examine some more specific aspects of the language system that readers use. How does the language work to make meaning, in conjunction with the information from context? One way of thinking about this is to consider how we read by working 'top-down' or 'bottom-up' - shuttling between both the top level and the bottom level. By top level we mean the discourse or whole text level, seeing the text as a whole, and as the essential semantic unit, within the framework of the broader context of the culture. Here the work of Martin (e.g. 1985; Reid, n.d.) has been influential, with its conceptualisation of genre as a social process. By bottom level we refer to the fundamental grammatical unit, the clause, which functions to make meaning in a different way. Readers have to shuttle between these two levels constantly as they read and construct meaning, and it is likely that their ability to do so will contribute significantly to their reading competence.

Thus at the discourse level a reader will be making judgments about the social purpose of the text, who would write it and to what end within our culture. Next the generic structure of the text would come under attention: how does it begin, in what ways does it develop and how does it end? Relevant issues here include the 'content' of the subject area, the range of genres that are used and needed at various levels and in our society, the experience of learners with these different genres, the ideologies encoded in them, the social power of different genres, and the social background and range of experience ('subjectivity') of learners.

Read these two texts. What is their purpose and their importance in our culture?

Texts: 'CARS' (From: Webb, 1991)

'WHALES'

They are factual texts, and deal with economic, biological and social issues that are central in our culture. All of the issues just discussed concerning the top level matters apply to them.

When we consider the bottom level, at the level of the clause and the lexicogrammar, we are concerned with the reader's ability to use the subsystems of the
grammar. To summarise these, there would have to be a 'reading' of three major subsystems of the grammar, each corresponding with the three register variables (field, tenor and mode) and the three metafunctions or ways of meaning (Ideational - field; Interpersonal - tenor; Textual - mode).

The first, related to field, is the transitivity system, the means provided by the grammar for the representation of knowledge and our experience of the world. Here we focus on the participants (nouns and noun phrases), the processes (verbs) and circumstances (adjuncts, or phrases carrying background information). The second, related to tenor, is the mood system, our means for constructing dialogue between writer and reader, with choices between indicative, including declaratives and interrogative, and imperative. These are likely to vary greatly, from factual texts where the tenor is almost neutral to those fictional and more personal texts where the tenor is strongly displayed. Other resources include matters like degrees of impersonality, expressed by modality (being tentative or certain) and by modulation (obligation). Finally there is the system of theme, related to mode, the means we have for constructing the message of the text as a whole. The theme is particularly important in written texts. It is the element that comes first in the clause, its point of departure, from the writer's point of view. Once the reader has established this starting point they can move on to the rest of the clause, the 'news' that the writer wants to pass on.

In the two factual texts above we can examine these elements of the grammar. When we consider transitivity, 'car', 'bus', 'travel' and, more abstractly, 'transport' seem to be important participants in one text. Processes include 'carry', 'use', 'reduce' and, less obviously, 'is' and 'are'. In the other text we have items like 'whale', 'fish', 'mammal' and 'plates', the latter being specialist, technical terms that will need careful explanation by teachers. Processes here include quite regular use of 'is' and 'are' (relational processes), as well as 'can weigh', 'give birth', 'breathes', and 'hang down'. The relational processes are important because they enable the writer to present information economically and to connect items with each other in taxonomic relations that are so important in science. Sometimes the reader may not appreciate how these relations are being constructed and teachers will have to assist them here.

Mood presents quite different challenges to the reader. The younger reader will be used to a dialogue where relations are more more clearly defined by the situation; when Mum gives an order (imperative) it is obvious that she is an authority. But in these factual texts the writer mainly uses declaratives - 'is' (a vehicle), 'have' (hair) and (people) 'drive' (cars). These are authoritative statements made by the knowledgeable expert writer, who is more distant from the reader than Mum is. Notice also how claims are modulated: 'Cars can usually carry…'.
Theme can be examined by marking off and listing the first part of each clause, that element before the process (verb). In the 'car' text these are:

A car, like a bus
cars
Most cars
Many people
Bus travel, by contrast
In Australia, most people
Buses
Buses
As well as buses operated by the government, there

In the other text we have:

"What"
The answer
It
However, when asked [etc]
The blue whale
It
And it
There
What
Well, there
etc

However there are some much longer themes:

Being a mammal also
This fountain of vapour
The second group of whales

Such long themes are typical of technically oriented texts which pack in information by the use of these long nominal groups (noun phrases).

By examining the themes in this way we can see how the message of the text is built up and organised. If we set these against the corresponding 'news' (the rest of the clause) we can then see very clearly how the message is being constructed, its patterning and continuity, and are therefore in a position to help readers understand the way these texts mean. In fact, while we have been operating at the bottom level the process of listing the themes has enabled us to see how the whole text is making meaning.

What the reader has to do is to shuttle between these macro and micro levels so as to fully understand the text. Certainly the reader will have to be quite proficient at the
lower level if they are to be able to deal with the broader questions associated with the
discourses at the higher level, but this is not a one way street and there will be a need to
move between both levels constantly for competence in reading. At the lower level,
beginners (young readers, ESL readers of various ages) will need assistance with
aspects like tense, the article, phrasal verbs, singular/plural patterns and features of
written language like nominalisation and embedding, as well as abstract and technical
discourse.

There is an outcome to all of this discussion. Each text has been written with a
reader position in mind (Kress, 1985). The propositions put in the text should ideally
be 'read' as obvious, natural, common sense and unproblematic. This is the compliant
position for the reader to adopt. But the reader can resist this desired reading - if they
know how the text has been constructed to make its message. The following text is
taken from a school textbook:

"ABORIGINALS"

What reading position has been constructed here? Notice how quickly the text
constructs the Aboriginal experience as one of lacking the ability to resist: this was the
problem - for the Aborigines, according to the writer. Aborigines may not have seen
this as a weakness or a problem, however. Think of the numerous texts students may
have already read which buttress this point of view, the cotexts that have already
positioned them as readers and predisposing them accept the 'voice' of this text. One of
the most far-reaching tasks of a teacher of reading or of English is to help students learn
to see through the text so as to understand how it has been constructed, and this can
only be done when the reader has been helped to acquire this understanding. Then the
reader will be able to resist, if that is in their best interest.

3. Reading pedagogy

So far we have been sketching out a linguistic model of what is involved in
reading. Here we briefly examine some of the teaching implications of the model. One
important source of guidance here is to be found in the insights gained from social
learning theory and in particular the language development studies of Halliday (1975) in
his book *Learning how to mean*, and of Painter (1984, 1991), especially the latter's
important article "The role of interaction in learning to speak and learning to write" in
Painter and Martin (1987). These studies show how the language learner actively
works with more mature models of language, negotiating meaning in a shared
environment where language and texts are modelled by the adult and jointly constructed
by child and adult.
The role of the teacher may be seen as one of amplifying the context in which language is being used, equipping the student with an understanding about language that is functional - of how language works to make meaning, as we have sketched it out here, with reference to reading. The teacher must scaffold the students learning activities, supporting their efforts to make meaning from texts by constantly clarifying the contextual features we have outlined above, relating these to the language system, and making the language more visible. One important element in this task is developing a metalanguage, a language about language, so that teacher and student can communicate readily. There are examples of such a metalanguage in \( \ldots \)'s paper, and more systematic statements are to be found in the glossaries of the LERN and DSP publications (see descriptions in the references).

The curriculum cycle that has been developed in the DSP project (Sydney Metropolitan East Disadvantaged Schools Program, Erskineville Public School, Erskineville, Sydney) includes elements concerned with modelling texts, jointly constructing and individually constructing them. The first two elements are relevant to reading pedagogy. These are the modelling and joint construction phases. When the teacher models the text we are using a strategy that is a normal part of language development, showing the student what is involved in a text's construction - its purpose and overall structure in context (our 'top level') and its more specifically linguistic features (our 'bottom level'). Modelling texts that occur as part of the students learning activities and that are relevant to their curriculum means a deliberate and planned focus on the texts features, and perhaps some shuttling between the two levels we have mentioned. This means that the teacher will have to analyse the texts, then be prepared to take appropriate opportunities, within the planned activities of the curriculum (whatever the subject area may be), to discuss and highlight the texts' features - with individuals in reading conferences, with small groups, and occasionally with the whole class.

Sometimes modelling will need to be given considerable emphasis in a reading or English programme, especially when the genres and related language features are new to the class. At other times brief minilessons are all that is needed.

The other strategy for reading instruction is that of joint construction of the text's meaning. While modelling involves a fairly teacher oriented lesson, i.e., strong scaffolding, the activity of joint construction involves mutual, reciprocal activity on the part of teacher and students. Here the aim is for both to work at reconstructing meaning from the text, using the knowledge gained from the modelling activities to interpret the text and some conclusions about a 'reading'. The teacher's role here is that of the expert language user, who directly assists the readers with suggestions about an interpretation using the top and bottom level features we have discussed. The students
are expected to use their knowledge of the 'field' of the text i.e., its subject matter, whether factual or fictional, in the joint activity of reconstructing meaning. Together teacher and learner take this shared responsibility for making meaning. This is a teaching strategy delicately poised between being too directive and too passive.

To understand some of the issues here the reader could now reexamine any of the texts discussed here, asking the following questions:

- What features of the text/context would you need to model?
- What would be likely to come up in a joint reading of this text? Where are the problem areas in the context/language, as far as your own students are concerned? What would you be able to expect from them? What would you have to be ready to explain?
- What reader position is called for by the text?
- How could learners learn to challenge it?
- Any further implications for our understanding of reading and reading pedagogy?

4. Conclusion

The principles that are important for understanding reading and for teaching English are far reaching ones, that relate to the types of text read, the sorts of context in which they are relevant and the language features that are typical of them. Reading is presented here as an activity that calls on the reader to articulate the factors of language, context and text in the process of interpreting text. There are many more issues that are relevant, particularly those concerning younger readers and other beginners; many of these can be clarified by using linguistic principles. This is particularly the case with the often vexed question of the relationship between the sound system and the written system of language. Another aspect we can illuminate is the way in which reading can be shown to develop over the long term, as the student learns 'how to mean' in more and more registers associated with the culture and reflected in the curriculum and its sequencing.

Essentially, however, many of the issues are summed up in the need to see reading, and the study of English, as an activity where control of the language system is critical if the reader is to develop into a competent and critical interpreter of the texts that are used throughout the curriculum.
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Whales

There are many species of whales. They are conveniently divided into toothed and baleen categories. The toothed whales are found world-wide in great numbers. The largest is the Sperm whale, which grows to about the size of a boxcar. Other species familiar to Canadians are the Beluga or white whale, the Narwhal with its unicorn-like tusk, the Killer whale or Orca, the Pilot or Pothead whale, which is commonly stranded on beaches, the Spotted and Spinner Dolphins that create a problem for tuna seiners, and the Porpoises which we commonly see along our shores.

There are fewer species of the larger baleen whales, that filter krill and small fish through their baleen plates. The largest is the Blue whale which is seen frequently in the Gulf of St Lawrence. It reaches a length of 100 feet and a weight of 200 tons, equivalent to about 50 African elephants. The young are 25 feet long at birth and put on about 200 lbs. a day on their milk diet. Other species are: the Fins which at a length of 75 ft. blow spouts of 20 ft., the fast swimming Seals, the Grays so commonly seen on migrations along our Pacific coast between Baja California and the Bering Sea, the Bowheads of Alaskan waters, the Rights, so seriously threatened, the Humpbacks enjoyed by tourists in such places as Hawaii and Alaska, the smaller Bryde’s whales, and the smallest Minke whales, which continue to be abundant worldwide.

As with the growing interest in birding, increasing numbers of whale watchers can distinguish the various species of whales. [W R Martin 1989]
What is **inflation**? What are the causes and consequences of **inflation**? What are the policies used to control **inflation**?

**Inflation** is an increase in the general level of retail prices, as measured by the **consumer price index (CPI)**. The CPI is determined by quarterly surveys of prices for a representative range of goods and services. This 'basket' of goods and services was determined by the Australian Bureau of Statistics from an estimation of the **pattern of household expenditure** in 1984. The selected goods and services are divided into eight groups: food, clothing, health and personal care, housing, household equipment and operation, tobacco and alcohol, recreation and education, and transportation. Each item is given a weighting which reflects the relative importance of the item in the household budget.

There are a number of factors which contribute to **inflation**. These include demand pull, wage push, external causes, inflationary expectations, public sector causes, price shocks and excess money supply...

### Causes

The causes of **inflation** are high consumer demand, cost push, increase in money supply, high interest rates, external factors and government intervention.

**High consumer demand** is when consumers are demanding at such substantial levels that supply is not able to respond. An increase in **consumer demand** will result in high prices owing to a **shortage** in domestic supply. Therefore demand is spilling over into **imports**.
The Breakout: 16 October to 25 November

This most successful phase of the Long March owes a great deal to the diplomatic skills of Zhou Enlai and to the bravery of the rearguard. Knowing that the south-west sector of the encircling army was manned by troops from Guangdong province, Zhou began negotiations with the Guangdong warlord, Chen Jitang. Chen was concerned that a Guomindang victory over the Communists would enable Chiang Kaishek to threaten his own independence. Chen agreed to help the Communists with communications equipment and medical supplies and to allow the Red Army to pass through his lines.

Between 21 October and 13 November the Long Marchers slipped quietly through the first, second and third lines of the encircling army. Meanwhile the effective resistance of the tiny rearguard lulled the Guomindang army into thinking that they had trapped the entire Communist army. By the time the Guomindang leaders realized what was happening, the Red Army had three weeks’ start on them. The marching columns, which often stretched over 80 kilometres, were made up of young peasant boys from south-eastern China. Fifty-four per cent were under the age of 24.

Zhu De had left a vivid description of these young soldiers:

They were lean and hungry men, many of them in their middle and late teens...most were illiterate. Each man wore a large sausage like a pouch filled with enough rice to last two or three days. (A. Smedley, The Great Road, Calder, New York, 1958, pp. 311-12)

By mid-November life became more difficult for the Long Marchers. One veteran recalls:

When hard pressed by enemy forces we marched in the daytime and at such times the bombers pounded us. We would scatter and lie down; get up and march then scatter and lie down again, hour after hour. Our dead and wounded were many and our medical workers had a very hard time. The peasants always helped us and offered to take our sick, our wounded and exhausted. Each man left behind was given some money, ammunition and his rifle and told to organize and lead the peasants in partisan warfare when he recovered. (Han Suyin, The Crippled Tree, Jonathon Cape, London, 1970, pp. 311-312)

When entering new areas the Red Army established a pattern which was sustained throughout the Long March:

We always confiscated the property of the landlords and militarist officials, kept enough food for ourselves and distributed the rest to poor peasants and urban poor... We also held great mass meetings. Our dramatic corps played and sang for the people and our political workers wrote slogans and distributed copies of the Soviet Constitution... If we stayed in a place for even one night we taught the peasants to write six characters: ‘Destroy the Tuhao’ (landlord) and ‘Divide the Land’. (A. Smedley, The Great Road, Calder, New York, 1958, pp. 311-12)
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"What is the biggest fish in the world?" The answer is not, of course, the blue whale — for whales are not fish but mammals. It is in fact the whale shark, which can grow to 15 metres long and weigh 30 tonnes. However, when asked to name the biggest creature that ever lived, this time the answer would indeed be the blue whale.

The blue whale is the biggest of all animals. It can grow to 25 or 30 metres long, which is as long as 8 cars in a line. (In the old days, before whaling, they grew to 40 metres.) And it can weigh over 100 tonnes — as much as 25 elephants. There are many other types of whale living in the oceans around Australia and these are pretty big too.

What do we mean when we say that the whale is a mammal and not a fish? Well, there are three main differences. Firstly, whales (and other mammals) are warm-blooded whereas fish are cold-blooded. Secondly, whales have hair whereas fish have scales. (Actually whales have very little hair but their skin is very much like the ordinary mammal skin.) And thirdly, whales give birth to their young and suckle them on milk, whereas fish lay eggs.

Being a mammal also means that the whale breathes air in and out of its lungs, like you and me. However, the air goes in and out through a "blowhole" on top of the whale's head, not through its mouth. In this way, the blowhole is like the whale's two nostrils, which have joined together and moved to its forehead!

A blue whale can stay underwater for ten minutes or more on one breath of air sucked in through the blowhole. When the whale returns to the surface it breathes out and its breath, being warm and moist, condenses in the cold ocean air like your breath does on a cold winter's morning. This fountain of vapour can be seen a long way off and shows where the whale has surfaced. This is why the old whale-hunters used to shout 'There she blows!'

There are two main groups of whales, distinguished by the way they feed. The first group are called the baleen or whalebone
**Whales.** They feed by filtering out small creatures from the seawater using rows of sieve plates inside their mouths. The sieve plates hang down inside the whale's mouth, like an internal moustache. The water flows in through the mouth when it's open and the whale then pushes its tongue forward and forces the water out over the sieve plates. Small creatures called krill (see page 34) are drained from the seawater, licked off the plates, and swallowed by the whale.

The second group of whales is called toothed whales. They feed on large animals which they catch and tear up using their rows of sharp teeth. Killer whales and sperm whales belong to this second group. Killer whales can be especially ferocious and attack seals, penguins, squid, large fish, and even other whales.
The Royal Heathside Hospital, in a fashionable suburb of London, was the epitome of excellence in modern medicine. Its structure of polished black stone and gleaming chrome rose to an impressive height of twelve storeys, contrasting sharply with the small shops and streets of quiet Victorian houses on its doorstep.

At first there had been some protests when this giant started to rise in the neighbourhood, but during the ten years since its completion the locals had grown proud of their new hospital. There were 700 beds in spacious and well-equipped wards and the very latest technology in all supporting departments. Added to that, a thriving Medical School and an efficient School of Nursing...

"Why, it's almost a pleasure to be ill these days!" So said Mr. Lomond to Dr. Stirling, the stalwart new registrar, on his first visit to Addison Ward.

The patient slipped his arm around the trim waist of young Sister Bryony Clemence. "They're a great bunch of nurses on this ward, Doc, but she's the cream!" He grinned at her embarrassment as she eased herself away. "You don't need to blush, Sister."

The houseman, John Dawson, accompanying Dr. Stirling, winked broadly at Bryony, but the registrar, concentrating on the charts he was studying, either did not hear or chose to ignore the remarks.

He glanced towards Mr. Lomond, on Addison for the control of his diabetes, and observed pleasantly: "Well, you seem to be stabilising nicely now. You'll be going home before long."

The small group moved on towards their last patient, but before discussion could begin both doctors' bleeps sounded urgently. Making for the nurses' station John Dawson picked up the telephone. After a brief exchange he came speeding back to murmur urgently to the registrar: "It's a cardiac arrest, Simpson Ward."

Whereupon both he and Grant Stirling were gone in a flash.

Student Nurse Patty Newman, fresh from the Introductory Block and full of enthusiasm, dogged Bryony's footsteps. "Does that mean we have to get a bed ready, Sister?"

Bryony smiled at her eagerness, "No, the patient will go to Intensive Care first ... if they're in time."

She adjusted a white haircilin holding the frilly cap on her honey-blonde curls and glanced at her watch as an orderly appeared pushing the patients' tea-trolley. "Well, I expect that's the end of rounds for this afternoon. You can relieve Nurse Smith while she goes to tea, Patty. She's in High Dependency, with Tina. You know, the new anorexic girl ..."

The Junior sped off to her appointed task while Bryony detailed others of the staff to go to tea.
A car, like a bus, is a vehicle for transporting people. Cars can usually carry a maximum of 5 or 6 people whereas buses can carry many more. Most cars use petroleum or diesel fuel as do buses, but there are some cars and buses which are electric. Many people are killed or injured each year in car accidents. Bus travel, by contrast, is a very safe form of travel, although just one serious accident can claim many lives. In Australia, most people drive cars, and the roads of many urban centres are choked with this form of private transport. Buses can reduce the amount of traffic on the road because they can carry more people, and therefore they save on fuel and other costs. Buses generally operate on urban, suburban, or inter-urban routes. As well as buses operated by the government, there are some private bus companies, particularly for long distance travel.
Aboriginal cultures...did not survive in the face of European invasion. This was due in part to the ethic of territoriality, which placed more emphasis on defence than on offence. Because of the strict adherence to this, no social mechanisms existed for creating armies to fight the Europeans, who had an easy time tackling tribe after tribe. As well, tribes found it impossible to unite in the short time allowed. The Aborigines' emphasis on the necessity of stability and the European desire for expansion, progress and change inevitably clashed. .

(Queensland Department of Education, (1988) Primary Social Studies Sourcebook: Year 4)