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## UNIT 13 INFORMATION PROCESSING

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### Learning Outcomes

After going through this unit, you should be able to:

- explain the value of information processing in the overall process of consumer buying behaviour;
- explain in detail the stages in the information processing of the consumer;
- develop insights in making effective marketing communication for information processing in favour of your brand/product offers.

### Structure

- 13.1 Introduction
- 13.2 Concept of Information Processing
- 13.3 Exposure
- 13.4 Attention
- 13.5 Comprehension
- 13.6 Acceptance/Yielding
- 13.7 Retention
- 13.8 The Imaginal Processing
- 13.9 The Influencing Factors
- 13.10 Marketing Implications of Information Processing
- 13.11 Summary
- 13.12 Key Words
- 13.13 Self-Assessment Questions
- 13.14 Project Question
- 13.15 Further Readings

*Have you noticed that sometimes we go into a store (or a website) with the aim of buying one brand but leave with a different brand or additional products? Store atmospherics, web design dynamics and other Influencing factors operating within the retail outlet or the webpage induce additional information processing, which in turn influences the final purchase decision. The fact that in the retail outlet consumers often purchase brands other than or in addition to those planned leads to more effective marketing strategies than viewing such purchases as haphazard or illogical.*

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### 13.1 INTRODUCTION

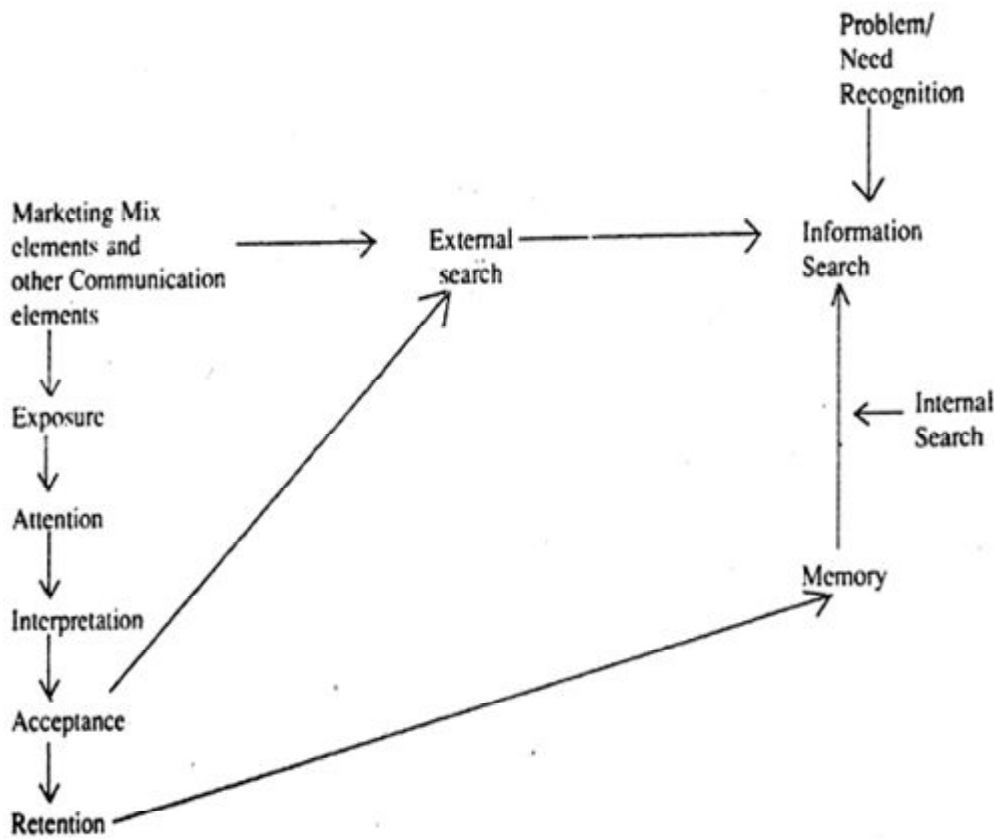
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As we all know, marketers need-to communicate. For that matter anybody in the society needs to communicate. However, the format and the intensity of stimuli may differ among the persons themselves as well as among the marketers. The net result is that we are all bombarded with continuous and countless stimuli from our environment.

Fortunately, or unfortunately, our brain’s capacity to process information is limited and finite. Thus, consumers are very selective about what they pay attention to. As a consequence of the process of selectivity, people attend to only a small portion of stimuli to which they are exposed. Consumers practice a form of psychic economy, picking and choosing among stimuli, to avoid being overwhelmed by advertising clutter. This over-abundance of advertising stimuli highlights the importance of information processing.

Figure 13.1 provides an overview of the communication process that links the marketer with the consumers.

Figure 13.1: An overview of the communication process.



**Activity1**

Analyze the figure13.1 and write down your reactions in the space given below

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**13.2 CONCEPT OF INFORMATION PROCESSING**

Information processing is described as “a series of activities by which stimuli are transformed into information, stored and used”. It thus serves the purpose of linking

an individual with groups, situations and, in our present context, with marketing influences.

The words Information processing consist of two separate terms: **Information** and **Processing**. Let us briefly look at these to get a clearer sense of what is involved.

### 13.2.1 Information

Information is a commonly used word which makes us most of the time immune to its powerful meaning. Thus, information is “all facts, estimates, predictions, and generalized relationships which affect a decision maker’s perception of the nature and extent of uncertainties associated with a given consumption problem or opportunity”.

**Facts:** are the simplest form of information and have the characteristic of being either directly observable or verifiable as an accurate representation of a given phenomenon or event. Thus, that Tata Magic is made by the Tata Motors is a fact.

**Estimates:** as a form of information is based on inferences. The inference may be drawn either logically or statistically derived. Since collection of facts all the time, may be unnecessary as well as expensive, the estimates are used. In the context of the Hero cycles, the estimates are that it is the largest selling bicycle in India.

**Prediction:** Unlike the first two forms of information mentioned so far, prediction is futuristic in nature since it makes forecasts of events yet to happen. Thus, Hero cycles as a brand will continue to dominate the Indian Cycle market in coming years is an example of prediction.

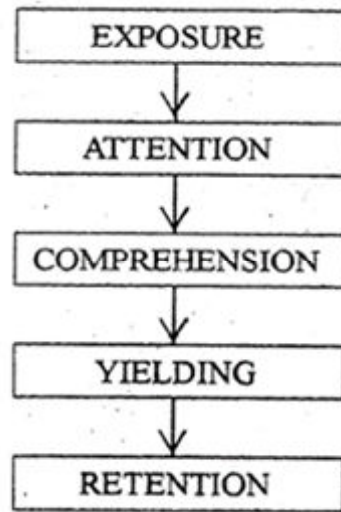
**Generalized Relationship:** This form of information is a form of linkage between the past and the future or links the facts with inferences. Thus, we can say that Hero Cycles adopted the policy of large production, low cost, and branding in order to achieve the large sales volume that they have made.

In the context of consumer behaviour, the precision is necessary in clarifying as to what form of information is being referred to.

<p><b>Activity 2</b></p> <p>Reflect upon the meaning of information as mentioned in the section and list two advantages of this approach:</p> <p>.....</p> <p>.....</p> <p>.....</p>
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### 13.2.2 Processing

Processing refers to the act(s) by which the stimulus is converted into response. Figure 13.2 portrays the most common model of information processing. There are five stages of processing Exposure, Attention, Comprehension, Yielding, and Retention. Ideally, it is the wish of every marketer to ensure that his message passes through all the five stages of the information processing. In reality, most of the times such wishes are belied as the stimulus may die during any of these stages.



**Activity 3**

Analyse the figure 13.2 and write down your reactions in the space given below.

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### 13.3 EXPOSURE

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Exposure is ‘the degree to which people notice a stimulus that is within the range of their sensory receptors’. Consumers concentrate on some stimuli, are unaware of others, and even go out of their way to ignore some messages. During their daily activities, people are exposed to a large number of stimuli at random. While driving, you may hear commercials, see billboards and display advertisements, and so on that you did not intend to see. There are hundreds of television channels, thousands of radio stations, and countless magazines, websites, and digital media platforms available today in addition to the countless billboards and hoarding that line up our roads and walls. An individual can be exposed to only a mere fraction of the available stimuli.

An experiment by a management school on consumer exposure to information on the statutory warning against smoking of cigarettes brought this out fully. There was a confirmation of consumers’ tendencies to miss or ignore information in which they are not interested. Similarly, in USA, after a state law was passed that required banks to explain details about money transfer in electronic banking, the Northwestern National Bank distributed a pamphlet to 1,20,000 of its customers at considerable cost to provide the required information, which was hardly exciting bedtime reading. In one hundred of the mailings, a section in the middle of the pamphlet offered the reader \$10.00 just for finding that paragraph. Not a single person claimed the reward.

This just illustrates that no matter what information overload is created by marketing stimuli. Consumers will selectively be exposed to a very small fraction of these. We will now discuss the factors that determine this selectivity.

### 13.3.1 Selective Exposure

It refers to the truncated outcome of exposure. Experience is one factor that determines how much exposure to a particular stimulus a person accepts. Thus, if our past experience about the messages is not very stimulating, we will use what we term as the perceptual fillers, and will let them influence what we decide to process.

The zipping, zapping, and muting of commercials, use of the skip ad button while watching your YouTube programme or flipping the ad while reading a magazine demonstrates the self-selecting nature of media exposure. When one fast-forwards through a commercial on a pre-recorded programme, this is referred to as zipping. When a commercial comes on, zapping involves changing channels. Muting is the process of turning off the sound during commercial breaks.

Perceptual vigilance is another factor causing selective exposure. Consumers are more likely to be aware of stimuli that relate to their current needs. These needs may be conscious or unconscious. A consumer, who rarely notices car ads, will become very much aware of them when he or she is in the market for a new car. A digital media ad for a fast-food restaurant that would otherwise go unnoticed becomes significant when one glances at the smartphone in the middle of a five o'clock class, when he has already started feeling hungry.

### 13.3.2 Adaptation

It is another factor that affects exposure. Adaptation is 'the degree to which consumers continue to notice a stimulus over time'. The process of adaptation occurs when consumers no longer pay active attention to a stimulus because it is so familiar.

Almost like drug addiction, a consumer can become "habituated" and require increasingly stronger "dose" of a stimulus for it to continue to be noticed. For example, a consumer enroute to work might read a billboard message when it is first installed, but after a few days, it becomes part of the passing scenery. The following factors can lead to adaptation.

**Intensity:** Less intense stimuli (e.g., soft sounds or dim colors) habituate because they have less of a sensory impact.

**Duration:** Stimuli that require relatively lengthy exposure in order to be processed, tend to habituate because they require a long attention span.

**Discrimination:** Simple stimuli tend to habituate because they do not require attention to detail.

**Frequency:** Frequently encountered stimuli tend to habituate as the rate of exposure increases.

**Relevance:** Stimuli that are irrelevant or unimportant will habituate because they fail to attract attention.

**Activity 4**

Reflect upon the meaning of adaptation as mentioned in the section and add two more factors that can lead to it.

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## 13.4 ATTENTION

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Attention is ‘the degree to which consumers focus on stimuli within their range of exposure’. Because consumers are being exposed to so many advertising stimuli, marketers are becoming increasingly creative in their attempts to gain attention for their products. Dynamic packaging of information or stimulus is one way to gain this attention. For instance, a jam and jelly maker in India portrayed an adult enjoying this product but chatting and fretting like a baby. With the tagline “It’s Slick, It’s Quick, It’s Chik-Chika-Chik-Chik-Chik”. Similarly, the jingle ‘Paytm Karo’ attracts attention for easy and convenient mobile payment. Thus, in sum, attention is the assignment of cognitive ability to a given stimulus.

**Activity 5**

Recall at least three ads which in your opinion, display creativity to gain attention of consumers.

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### 13.4.1 Underscoring

Underscoring the paramount need of being always ahead in the art of gaining consumer attention, some media and communication consulting firms have established elaborate procedures to measure the attention of consumer on several fronts. Thus, for gaining attention to packages, or enhancing package effectiveness, they recommend using such instruments as an angle meter, which measures package visibility as a shopper moves down the aisle and views the package from different angles. Similarly, data from eye-tracking tests, in which consumers’ eye movements as they look at packages and ads are followed and measured, can result in subtle but powerful changes that influence their impact. For example, eye-tracking tests on an ad for Bombay gin showed that virtually no consumers were reading the message (in relatively small type) below the visual portion and that the Bombay bottle (also relatively small) positioned to the right of the visual portion was not seen by nine out of ten readers. The result was low recall scores for the ad. In a revised ad, the bottle’s size was increased, and the message was emphasized. Recall scores for this version were almost 100 percent higher than for the original. There are some tested methods by which the marketers gain the attention of consumer to what they are trying to communicate:

### 13.4.2 Contrast

When many stimuli are competing to be noticed, one will receive attention to the extent that it differs from those around it. Thus, contrasting is another way of gaining attention of the consumers. Stimuli that fall into unpredictable patterns often command a lot of attention. For example, Aamir Khan, a Bollywood actor, played the role of female Soniya in the Godrej commercials ‘Zindagi Muskuraye,’ which were aimed at urban dwellers for promoting a new range of products. Black and white ads on colour TV or in a full colour magazine are good examples of using contrast to attract attention

**Size and format differences:** Another powerful way to achieve contrast is to use a different colour and format. The size of the stimulus itself in contrast to the competition is also important. Readership of a magazine ad has been shown to increase in proportion to the size of the ad. In terms of format or placement, placing a marketing stimulus in a different format, for example using advertorials,

### 13.4.3 Closure

The principle of closure implies that consumers tend mentally complete a partially complete stimulus to achieve closure and therefore perceive an incomplete picture as complete. That is, we tend to fill in the blanks based on our prior experience. This principle explains why most of us have no trouble reading a neon sign even if one or two of its letters are burned out or filling in the blanks in an incomplete message. The principle of closure is also at work when we hear only part of a jingle or theme. Utilization of the principle of closure in marketing strategies encourages audience participation, which increases the chance that people will attend to the message.

#### Activity 6

Recall at least three ads which in your opinion, employ the theory of closure in gaining attention. Also offer your assessment as to why the advertiser has gained through this strategy.

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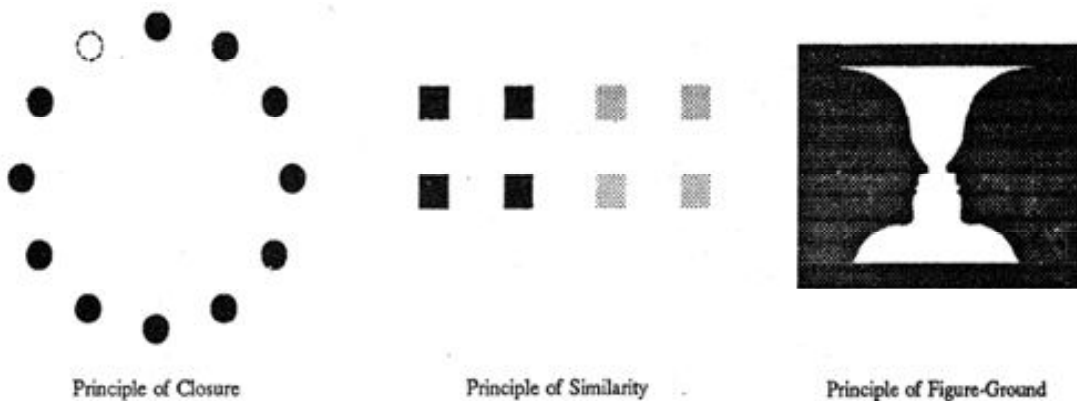
### 13.4.4 Principle of Similarity

The principle of similarity is based on the thesis that “consumers tend to group together objects that share similar physical characteristics”. That is, they group look- alike items into sets such that they form an integrated whole. Liril soap relied upon this principle when the company HUL (Hindustan Unilever Limited) redesigned its packaging as well as the campaign to bring out the fragrance of lime sensation. It created a ‘sea of lime sensation’ everywhere to unify all of its different attributes. Similarly, Lux has created the aura of “the cine star’s soap”.

### 13.4.5 Figure-Ground Relationship

Another important principle is the figure-ground relationship, ‘in which one part (the figure) will dominate while other parts recede into the background’. Figure 13.3 is an example of the same. This concept is easy to understand if one thinks literally of a photograph with a clear and sharply focused object (the Figure) in the centre. The figure is dominant, and the eye goes straight to it. The parts of the configuration that will be perceived as figure or ground can vary depending on the individual consumer as well as other factors. Similarly, in marketing messages that use the figure-ground principle, a stimulus can be made the focal point of the message or merely the context that surrounds the focus.

Figure 13.3



**Activity 7**

Contrast the principles of closure and the figure ground relationship in training attention of the customers. Which is likely to be more effective in the context of teenagers?

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## 13.5 COMPREHENSION

Comprehension is supposed to have occurred “when the consumer has placed the stimulus into any known or familiar categories in their mind and have assigned the meaning to them.” In general terms, comprehension refers to understanding or deriving meaning out of a given stimulus. For example, Robin Blue is associated with whiteness of clothing n account of the traditional understanding of indigo as a whitening agent and Margo soap with *neem* because of the long association that has been built by the brand with neem.

The process of understanding is just not the function of how effectively the message has been structured. The entire process is affected by factors like cultural values of the social system and the prior expectations of the receivers. For instance, focused on the country’s reliance on ayurvedic products, Patanjali positioned itself as a herbal brand. In a short span of time, it created a name for itself and fuelled the expansion of the herbal products market. Endorsement by Baba Ramdev, an expert in Yoga



and Ayurveda have ensured the significant presence of patanjali products in FMCG sector. More than the products, a segment of consumers perceived these products as a way to live a healthier lifestyle by using products with no chemicals or harmful additives.

Comprehension has two dimensions in the case of marketing to children. The first is that children often do not understand the persuasive intent of advertisements, and they also do not understand specific words and phrases in commercial messages. In some countries there are very strong guidelines on advertising to children. A prominent brand of toys once advertised their expensive range of toys with the byline “parents who care, buy.....”. The ad was considered unethical as it had the potential of creating negative feelings among children who, however much they cared, could not afford to buy this range.

**Activity 8**

Recall at least two advertisements that are aimed at children. Assess these advertisements from the standpoint of children’s comprehension.

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## 13.6 ACCEPTANCE /YIELDING

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The acceptance of the intended meaning of the marketing communication refers to the process of ‘accepting or the tendency to accept new or varied information or meaning there from and absorbing it in the cognitive structure and long-term memory’. In simple words, it refers to the act of agreeing or disagreeing with the incoming stimulus of the marketer. Thus, for instance, the fact that whether we accept or not the message of the marketers to pay a higher price for the environment friendly products, is an indication of whether we accepted the stimulus or not.

### 13.6.1 Resistance or Unyielding

Usually, consumers do not fight off with the marketers for their new meaning or inputs. If they don’t like a given input, they may just ignore it or make it a topic of social discussion at get togethers. This is a form of mild resistance or lack of acceptance. Thus, the consumers may not argue with the marketer whether a particular brand of detergent removes spots or not.

However, the stage becomes quite significant when some very important messages, particularly seeking a major behavioural change, are being communicated. For instance, a marketer asking us to allow freedom to the children to make their own purchases or to go for a new brand or the newer version of the brand in a very short time. The messages could be resisted rather actively. Thus, suggestive dialogues or sexually embedded messages in, the prime time of the family TV hours could be unwelcome and therefore unacceptable by the Indian consumer. The early versions of the ‘Kamasutra’ ads are an example for this active unyielding for the messages.

### 13.6.2 The Ways to Resist

There are several ways by which consumers may ‘tend to unyield’ or resist in respect of marketing messages. The first way is to list counter-arguments. Thus, the consumer may say that the washing powder that claims to soften the wash or remove stains is not credible as the similar ones have failed in the past and this one too will fail. The second way is to attack the source of the message. Thus, the customer may argue that the brand of the detergent under discussion has been brought out by a company that has failed several times in the past or that the celebrity that is endorsing the product in doing so only for money and no commitment. The third way is to seek support evidence or arguments. Thus, the consumer may argue that before she accepts the claim of the company, she would like to see the chemical report or the experiment results or the lab report or any other support argument. The fourth way is to resist persuasion to believe. This happens when the earlier meaning attached to the stimulus is too deep rooted and the consumer while he, understands the mistake, ostensibly resists the persuasion. In case of the continuing example of the detergent, the consumer may see the trial results or the lab report but may still resist to be persuaded to believe the claim. It could be due to any reason, ranging from the cognitive defence or an ego hassle or may be a disinclination to change the brand presently in use.

#### Activity 9

Review the answers you have given in the activity 8. Do you agree with them? Why or why not?

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2. ....  
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## 13.7 RETENTION

Retention refers to the last stage of the information processing. It signals ‘the entry or the arrival of the stimulus in the long-term memory of the consumer’. You have gone through a detailed discussion about memory in Block 2, Unit 5. To remind you, it is sufficient to say here that the retention is the ideal objective of the company in the context of information processing and that this helps customers develop attitude as well as beliefs about the consumption situation.

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## 13.8 THE IMAGINAL PROCESSING

So far, an impression seems to be gathering that information processing means word processing. This is incorrect and wholly inappropriate particularly today when images seem to be overtaking the words in communicating the messages. Availability of

Computer graphics, the tendency of the consumers to rush through the messages and the decidedly better effectiveness of the pictures, images or videos to convey the message has forced the marketers to understand imaginal processing as well. It is also easier to recall a picture or visual memory as research shows so marketers need to understand and utilise inputs on image processing by consumers.

Another important issue is the pictures that words seem to create. This is dependent on the power of suggestions and inferences or innuendos created by words. Sometimes the style of writing may force the consumer to visualise the whole consumption experience. Three aspects deserve our attention in this context the first is the imagery vividness. It refers to the aspect of clarity of the mental image that the message creates. The second factor is the message control. It refers to the ability to self-generate mental images and manipulation as soon as the cue(s) are given by the marketer. The third factor is the Imagery style that reflects the willingness on the part of the consumers to habitually engage in the imaginal processing as soon as the cues are given. The situation is involuntary.

The final issue here is the use of the ‘allegories and metaphors in information and how the consumers process these symbolic messages. The first is the processing of metaphors, which is essentially, is the use of simile (example: evening of life, suggesting old age). The other is the personification, which represents the abstract qualities as if they were person (example: The Air India’s Maharajah).

**Activity 10**

Draw a picture that in your view portrays the message of Dove soap or the Fair and handsome cream for men.

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### 13.9 THE INFLUENCING FACTORS

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Having gone through all the five important stages of the information processing, it is important to take them as a whole and identify what are those factors that influence the stages of the information processing: In doing so, it is not to deny that specific factors have more relevance to the pertinent stage. Thus, the influencing factors of exposure may have little relevance for retention or vice versa. Yet the fact is that there is a need of identifying a common set of factors that have a bearing on all the stages of the consumer information processing.

The first influencing set of factors is the **demographics** of the consumers or the receivers. Thus, it is believed that older consumers process less amount of new information as compared to the younger ones. Similarly, there could be gender related difference in the amount of information processing. Men and women differ significantly in terms of selective exposure, comprehension and retention. The housewife may have a different way of information processing than a working woman, even though they may share other demographic details.

The second factor is the **psychographic** factors. Thus, a person having a distinct interest in advertising may process advertisement differently than the ones who have interest in other field say, sports. Similarly, opinionated person deliberately seeks more information and are known to devote more time in analysing them.

The third factor is the **information** characteristics themselves. Rational appeal vs emotional appeal has a different outcome in consumer information processing. Single sided vs. two-sided advertisement are processed differently.

The fourth influencing factor is the **cultural** environment. People derive their usual meaning from the environment they live in, as you have studied in the Unit 11 of this course. The prevailing set of notions and expectation in the environment will force these consumers to process the marketing stimuli differently and interpret it differently. Thus, an insolent young man talking back to his parents may not be understood in the right manner in the oriental context where the respect for the elders is paramount. The meaning of colour is very culture determined for example the colour white is a symbol of purity and innocence and is the traditional colour of wedding ensemble for a bride in western cultures whereas in South Asian culture, pure white wedding ensemble would be strongly discouraged as it is taken as a colour worn during mourning

The fifth and final influence may stem from the **media** characteristics themselves. Thus, a particular medium may not help or actually retard consumer information processing. No wonder therefore, marketers supplement one medium with the other in order to facilitate the information processing of their messages.

**Activity 11**

List the few more factors that may influence the consumer information processing in rural India in your opinion.

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2. ....  
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3. ....  
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### 13.10 MARKETING IMPLICATIONS OF INFORMATION PROCESSING

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A marketer can ignore the understanding of consumer information processing only at his own peril. The following facts merit special attention in terms of aiding consumer’s information processing mechanisms:

1. The design of the message (use of colours, contrast, structure etc.)
2. The concept of proximity (the context in which the message is being given.

For instance, an advertisement for a serious product appearing in the slot for a humorous programme etc.)

3. The concept of selective exposure (the consumer tendency to skip the commercials or leaving the place during the commercial break)
4. Influence of values (conforming or violating the values like respect to elders, love to the younger ones, ridiculing the marital relationship etc.)
5. The distortion in the physical stimulus properties (poor transmission causing distortion in the message or the picture of the marketing message, or, poor printing or composition of the newspaper or the magazine carrying a message etc.)
6. The effect of information over-load (the situation where too much information is placed before the consumer and he feels completely overwhelmed by the enormity of it. The result: poor use of the information as well as irritation)

**Activity 12**

List three most important implications that may influence information processing by school-going children.

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2. ....  
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3. ....  
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**13.11 SUMMARY**

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The unit raises the issue of how the consumers process information and where the marketers may help the process by using appropriate strategies based on the understanding of information processing. The unit begins with an overview of the information. Then it defines the information as a process of converting stimuli into the meaningful pattern. The five stages of the information processing viz. exposure, attention, interpretation, acceptance and retention are dealt with in detail. An interesting issue of imaginal processing is also addressed in the unit. The unit closes by discussing the marketing implications in general, of various information processes.

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**13.12 KEY WORDS**

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- Sensation** : The immediate response of the sensory systems (eyes, ears, nose, mouth, fingers) to a stimulus.
- Exposure** : The initial stage of information processing where the stimuli come within the sensory systems.

- Attention** : The assignment of cognitive ability to the inputs sensed by the consumers' physical senses.
- Adaptation** : The process where the sensation becomes so familiar that the stimulus no longer remains the focus of attention.
- Yielding** : The stage where the stimulus so interpreted is also accepted by the consumer and retained in the belief system.
- Overload** : A situation where the information is far too much than the consumer can reasonably process or make any meaning out of it. The result is sub-optimum use of the information.

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### 13.13 SELF-ASSESSMENT QUESTIONS

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1. Define, information processing. How is it different from learning?
2. Elaborate the process of attention. How effective in your view is the use of creative packaging as a device to gain attention by the marketers?
3. Differentiate between interpretation and yielding. How does the former affect the latter?
4. Is the stage of acceptance relevant in all types of information processing? If not, in what situations it may not form the part of consumer information processing?

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### 13.14 PROJECT QUESTION

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1. Select five children related advertisement and show them to 10 children in your neighbourhood. Check their interpretations by these children and compare them with the intended meaning of the marketers. Write down your analysis.

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### 13.15 FURTHER READINGS

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1. Kotler, P., Keller, K.L., Koshy, A. and Jha, M. (2018), Marketing Management: A South Asian Perspective, Pearson Education.
2. Schiffman, L.G, Wisenblit, J., and Ramesh, K.S. (2018). "Consumer Behaviour", Twelfth edition, Pearson Education.
3. Solomon, M.R. (2018). "Consumer Behaviour: Buying, Having, and Being" Twelfth edition, Pearson Education.