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АНГЛИЙСКИЙ ЯЗЫК ДЛЯ СПЕЦИАЛЬНОСТИ «ПСИХОЛОГИЯ СЛУЖЕБНОЙ ДЕЯТЕЛЬНОСТИ»

Учебное пособие

Министерство образования и науки Российской Федерации
Байкальский государственный университет

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Пособие состоит из восьми уроков, основанных на оригинальных текстах по общей психологии, грамматических и лексических упражнений к ним, упражнений, направленных на выработку навыков устной речи по темам уроков. В качестве дополнительного или домашнего чтения предлагаются восемь текстов, близких по тематике к основным текстам.

Пособие рекомендуется для начального этапа обучения работе над специальной литературой для студентов, обучающихся по специальности «Психология служебной деятельности», с целью формирования у них необходимой для этого лексико-грамматической базы.

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Предисловие

Настоящее пособие предназначено для студентов первого курса специальности «Психология служебной деятельности».

Цель пособия – сформировать у студентов следующие навыки:

1. Научиться читать и понимать оригинальные научно-популярные психологические тексты.

2. Уметь поддерживать беседу на английском языке и делать сообщения в рамках изучаемых тем.

3. Адекватно переводить оригинальные психологические тексты среднего уровня сложности.

Пособие состоит из восьми уроков. В центре каждого урока – текст по одному из разделов общей психологии. Все тексты, включенные в пособие, научно-популярные по своему характеру, являются оригинальными и неадаптированными.

Каждый текст предваряет список активной лексики.

Активная лексика урока закрепляется в ходе выполнения послетекстовых лексических упражнений. Это упражнения на перевод словосочетаний и коротких предложений с английского языка на русский и с русского на английский. В качестве лексических в пособие включены упражнения, на заполнение пропусков и заключительные упражнения на письменный перевод связных текстов.

Тематика текстов уже знакома студентам из курса общей психологии, на их основе можно успешно развивать навыки устной речи. Это вопросно-ответная форма работы над текстами, пересказ отдельных положений из текстов, пересказ целого текста, сообщения студентов о состоянии поднимаемых в текстах проблем в современной психологии.

Lesson I
PSYCHOLOGY AS A SCIENCE OF CONSCIOUS EXPERIENCE

Active Vocabulary

1. **add,** *v* прибавить, добавить
addition, *n* добавление, дополение
in addition to помимо
2. **adjust,** *v* приспособиться к чему-либо
adjustment, *n* приспособление
3. **apply**, *v* 1. обращаться с просьбой, просить 2. Использовать, употреблять
application, *n* применение, использование
4. **approach**, *n* 1. Приход, приближение, наступление 2. Подход (к рассмотрению чего-то)
approach, *v* подходить, приближаться
5. **behave**, *v* вести себя
behavior, *n* поведение
6. **condition**, *n* 1.состояние, положение 2. Pl Обстоятельства, условия
7. **conscious**, *adj* 1. Сознающий, осознанный, сознательный 2. Ощущающий
consciousness, *n* 1. Сознание 2. Осознание, понимание 3. Сознательность
8. **contribute**, *v* вносить вклад, способствовать, содействовать
contribution, *n* – вклад
9. **deal**, *v* (with) иметь дело с чем-либо, рассматривать что-либо
10. **depend**, *v* (on, upon) – зависеть от
dependence, *n* зависимость
dependent, *adj* зависимый
11. **environment**, *n* окружающая обстановка, окружение, среда
12. **experience**, *n* (жизненный) опыт
experience, *v* 1. Испытать, узнать по опыту 2. Испытать, переживать
experienced, *adj* опытный, квалифицированный
13. **instead of**, *prep* вместо, взамен
14. **phenomenon**, *n* (pl phenomena) – явление, феномен
15. **procedure**, *n* процедура
16. **random**, *adj* случайный
non-random, *adj* неслучайный
17. **survive**, *v* уцелеть, остаться в живых
survival, *n* выживание
survivor, *n* оставшийся в живых, уцелевший

Text

PSYCHOLOGY AS A SCIENCE OF CONSCIOUS EXPERIENCE

The nature of Science

A science is an organized body of reliable information. Such a body of knowledge does not grow as a result of speculation alone< not does it develop from random observations. Its accumulation depends on the use of special procedures which constitute scientific method. In the early stages of a science, moreover, the importance of the procedure used far outweighs that of the information obtained.

Psychology, like every other science, acquired scientific status when (1) its observations became systematic rather than aimless; (2) its observations became impersonal – that is to say, when psychologists honestly sought information instead of attempting to prove their own ideas by a prejudiced selection of facts, and (3) it became possible for any qualified investigator to repeat the observations of another, under essentially the same conditions, and to verify the results.

The requirements of science are most closely fulfilled when investigators use experimental methods, when instead of observing what occurs spontaneously, they change aspect of nature and note the effect of these changes on phenomena which come within the range of their inquiry. Psychology achieved scientific status when it became experimental. As we shall see, experimental procedure in psychology was first applied to analyses of conscious experience.

Analysis of Consciousness

The formal launching of psychology as a separate science occurred in 1879 when Wilhelm Wundt opened his Psychological Institute at the University of Leipzig. Wundt was a physiologist and philosopher who had made contributions to both of these fields. In addition to his experiments in psychology, he was to continue making important contributions to philosophy.

The new movement was not so much a revolt against mental philosophy as an attempt to get psychology out of an impasse, by utilizing the experimental method of physiology and physics.

No science is, in an absolute sense, independent of philosophy. Psychology has never completely broken away from philosophy and the two disciplines will always have much in common, since scientific endeavours psychological or otherwise, are preceded and followed by speculation. Today there is a flourishing branch of philosophy, the philosophy of science, which critically examines the aims, methods and conclusions of all sciences.

Scientific psychology at first took over the same apparatus and methods with which physiologists and physicists had been investigating behaviorand experience. Very soon, however, psychologists were finding new problems and devising apparatus and procedures of their own.

Most of the early psychological experiments dealt with experience. There was only incident in a scientific study of behavior as such: that is, in what persons said

and did. Individual observers were trained to attend to and describe their experience while the experimenter made various changes in light, sound and other external conditions. He also made experimental changes in physiological conditions (fatigue, hunger, thirst). The method of attending to and describing experiences under known external and internal conditions was called experimental introspection.

The chief aim of Wundt and his students was to discover the ingredients of conscious experience. It was claimed, that it could be analyzed into its elements (sensations and so on). Especially there was an effort to discover the relations between stimuli, physiological structures, and particular types of experience. Because of emphasis upon conscious experience, psychology was at that time designated the science of consciousness.

The Functions of Consciousness

While some psychologists were trying to discover what consciousness is by analyzing experiences and relating them to environmental and organic factors, other investigators of consciousness were more interested in what consciousness does, that is, in its functions. Perhaps of the most important impetus for such "functional" approach to the study of consciousness came from the Darwinian doctrine of evolution. Darwin, in discussing the struggle for existence, had pointed out that organisms which have the most adequate means of adjusting to their environment are those most likely to survive. How consciousness might aid survival of organism appeared, therefore, worthy of scientific study. Introspection revealed that learning a motor skill makes one vividly conscious at first of one's activities. As the habit approaches perfection, however, consciousness gradually recedes. The perfected habit then is carried out automatically, without necessary participation of consciousness. Thus it appeared that consciousness contributes to the survival of organisms by aiding them to learn.

This approach to the study of consciousness failed to advance an understanding of what consciousness is, or even, to any appreciable extent, what consciousness does. Nevertheless, it proved very important in shaping the further development of psychology. Seeking to discover the functions of consciousness in adjustment, psychologists were led to investigate the learning process itself. They eventually paid attention less to consciousness and more to the environmental and organic conditions which produce efficient learning. Such a change of emphasis made psychology what had previously been regarded as a science of the functions of consciousness, a science of behavior.

Exercises

I. Translate the following words into Russian and give similar Russian word:

Behavior, structure, individual, function, selection, identify, systematic, collection, test, universal, application, objective, subjective, reaction, principle, concept, special, characteristic, basis, extremely, speculation, accumulation, status, doctrine, discipline.

II. Translate the following from Russian into English using active vocabulary:

1. Во время осмотра больной вел себя спокойно.
2. Мы изучали поведение животных в разных условиях.
3. Ученый провел этот эксперимент в очень трудных условиях.
4. Психологи также имеют дело с субъективным человеческим опытом.
5. Трудно иметь с ним дело.
6. Лучше иметь дело с объективными факторами.
7. Ученый применил новый метод к своему исследованию.
8. Применение нового метода дало хорошие результаты.
9. Применяйте ваши знания на практике.
10. Я могу это сделать при одном условии.
11. Проблема «Человек и окружающая среда» очень важна.
12. Поведение зависит от окружающей среды.
13. Ученые получили новые свидетельства зависимости животных от окружающей среды.
14. Такой подход к проблеме очень интересен.
15. Новый подход к проблеме дал очень важные результаты.
16. Наши выводы будут зависеть от результатов этого эксперимента.
17. Есть ли здесь какая-нибудь зависимость?
18. Мы пытались выяснить зависимость между поведением животного и окружающей средой.
19. Опыт помогает нам приспособиться к условиям окружающей среды.
20. Эта дискуссия содействовала решению многих теоретических проблем.
21. Вклад Павлова в развитие физиологии хорошо известен.
22. Участие многих выдающихся ученых содействовало успешной работе конгресса.
23. Постепенно случайное поведение стало целенаправленным.
24. Случайный отбор оказался удачным.
25. Инженеры называют случайную интерференцию «шумом».
26. Казалось, больной не сознавал, где находится.
27. Она сознавала, что ошиблась, но было уже поздно что-либо изменять.
28. Для нас было полной неожиданностью, что животные выжили в этих условиях.
29. Их единственной мыслью было выжить несмотря ни за что.
30. Способность приспосабливаться к окружающей среде находится в тесной зависимости от возраста.
31. Мне трудно приспосабливаться к его взглядам.

III. Choose the right word from the box and insert it into one of the sentences given below:

approach, to apply, application, environment, to deal with

1. These findings can be … in industry.
2. Individuals try to adapt to the conditions of their social …
3. Subjects used an extraordinary different … to the problem.

4. Several countries now have one or more research organizations which … with the problem of human ageing.

5. It is difficult to translate laboratory and clinical findings directly into practical…

IV. Read the following text without a dictionary and be ready to define the subject-matter of psychology:

Psychology Defined

Literally, the word psychology means the "science of the mind", but psychologists have never been satisfied with this definition.

Most contemporary psychologists would define psychology as the science of the behavior of organisms. By "behavior" they mean, first of all, activities or processes that can be observed objectively – both the isolated reactions of muscles, glands and other parts of the organism and the organized, goal-directed patterns of reaction that characterize the organism as a whole. Psychologists also interpret "behavior" to include internal processes – which one person cannot observe directly in another but which can be inferred from observation of external behavior.

Although psychology has been concerned with the behavior of human individuals and groups, it had also deal with the study of animal behavior of human individuals and groups, it has also dealt with the study of animal behavior. Animals have long held an important place in psychological laboratories as experimental subjects.

Since life span of most laboratory animals is shorter than that of people, it is possible to control genetic factors more easily than with people. Another advantage of studying animals is that animal behavior is simpler than human behavior and so it can be more easily investigated. Although great care is always necessary in interpreting human behavior in the light of findings from animal experiments, animal psychology has greatly contributed to our study of human beings.

V. Answer the following questions based on the text;

1. What is a science?
2. What does the accumulation of scientific knowledge depend on?
3. When did psychology acquire scientific status?
4. What is the main method of psychological investigations?
5. What contribution did Wundt make to the development of psychology?
6. What does psychology have in common with philosophy?
7. What did the early psychological experiments deal with?
8. Why may psychology at the beginning of this century be called the science of consciousness?
9. Whose doctrine contributed to the study of consciousness?
10. What does the Darwinian theory say about survival in the struggle of organisms for existence?
11. Does consciousness aid survival of organisms?

12. In what way does consciousness contribute to the survival of organisms?

13. What did the attempt to discover the functions of consciousness in adjustment lead psychologists to?

VI. Speak on the following topics:

1. The nature of science.
2. Wilhelm Wundt and his contribution to the development of psychology.
3. Close ties of psychology with philosophy.
4. The “functional” approach to the study of consciousness
5. The subject-matter of psychology
6. Branches of psychology

VII. Translate the following text from Russian into English:

Методы психологического исследования зависят от задач исследования.

Диалектический и генетический подход к изучению человека и животных является основой всей российской психологии.

Два главных метода применяются в процессе изучения человека и животных. Это экспериментальный метод и метод наблюдения.

Эксперимент проводится в лаборатории при тщательно контролируемых условиях. Поведение испытуемых в этих условиях дает сведения о поведении в естественных условиях. Но лабораторные условия эксперимента могут искажать поведение испытуемых. Поэтому психологи широко используют метод наблюдения.

Lesson II
SENSATION AND THE NERVOUS SYSTEM

Active Vocabulary

1. **ability**, *n* способность
to be able быть способным
2. **amount**, *n* количество
to amount, *v* насчитывать, составлять
3. **area**, *n* область, зона
4. **at least** по крайней мере
5. **brain**, *n* мозг
6. **cognition**, *n* познание
to cognize, *v* познавать
7. **distinguish**, *v* отличать, различать
distinction, *n* различение, распознавание
distinctive, *adj* отличительный, характерный, особенный
8. **filter out**, *v* отфильтровать
9. **hearing**, *n* слух
10. **impression**, *n* впечатление
impress, *v* производить впечатление
impressive, *adj* производящий глубокое впечатление, выразительный, волнующий
11. **message**, *n* сообщение
12. **quality**, *n* качество
quantity, *n* количество
13. **relevant**, *adj* релевантный, существенный, важный
14. **respond**, *v* отвечать, реагировать
response, *n* ответ, реакция
15. **sense**, *n* чувство, ощущение
sensation, *n* ощущение
sense, *v* чувствовать
16. **set**, *n* установка, комплект, набор
set, *v* устанавливать
17. **sight**, *n* зрение, вид
18. **smell**, *n* обоняние, запах
smell, *v* нюхать, пахнуть
19. **supply**, *v* снабжать
20. **taste**, *n* вкус
taste, *v* опробовать на вкус
21. **touch**, *n* осязание
touch, *v* дотрагиваться, осязать
22. **transmit**, *v* передавать, сообщать
transmission, *n* передача

Text

SENSATION AND THE NERVOUS SYSTEM

Of all features that distinguish man from animals, the most striking and the most complex is his ability to make sense to himself and to other of the world around him. He perceives, learns, thinks, remembers, and communicates in language and symbol to others. The general term used for the study of these abilities is cognition.

Through the senses we receive information about the world around us. We have at least eleven senses, but the five main ones are taste, touch, smell, hearing and sight. Each of these senses supplies a different quality of information about environment, but they normally work in harmony to give us a complex multi-dimensional impression of the world. The brain is the control centre and the nerves resemble message lines, transmitting information from our senses to our brain.

So far we have named the five basic senses but these are not the only means that man has for receiving information. The sense of touch, for example, can be divided into four separate sub-senses of pressure, pain, warmth and cold. Each has its characteristic receptors and there are varying concentrations of receptors in the body. The ends of the fingers have a large number of pressure receptors, but the back of the hand has vary few.

Each sense organ responds to energy (the ear to sound energy, the eye to light waves, etc.) which it transforms into nerve impulses. These nerve impulses are sent along nerve fibres in the nervous system to the brain. The nervous system is an intricate set of fibres. There are different pathways for different types of messages. The sensory (afferent) nerve cells and fibres pick up their information from the sense organs and transmit the messages to the spinal cord, which acts as the ‘trunk line’ for messages to the brain. Messages coming down from the brain are called motor (efferent) impulses and are directed to the muscles which go into action in response to these messages.

Although scientists have been able to discover this specialization of different nerve fibres, they have still a great deal to learn about the nature of nerve ‘messages’ and how they are coded and dealt with by the brain.

Various areas of the brain specialize in the receipt and translation of the nerve impulses arriving from particular sense organs. The back portion of the cerebrum receives the nerve impulses from the eyes. The top portion takes in the touch senses, and so on.

Apparently, the brain receives and sorts the messages and those that are of little or no use to the person are filtered out. The multitude of noises sounds, smells, that are always around us are banished, preventing our internal message centres from being clogged up with irrelevant or distracting information. The messages that are useful or important are sorted and translated.

Imagine yourself driving a car, when suddenly the traffic lights turn red. The red traffic light will be transmitted through the eye, stimulating nerve impulses to the brain. A return message from the brain makes you stop the car. Other light stimuli,

such as the colour of the sky, other cars, people will be also transmitted through your sense of sight, but the brain will filter them out as being irrelevant to your needs at the moment. It is not known how much of this information is stored away in the brain as a permanent record but it is certain that the brain has an enormous capacity for storage. With about ten thousand million interconnected cells the brain can receive, sort and analyze an enormous amount of material for future reference.

The brain, in short, can be thought of as a complicated control and storage system which depends primarily on sensation for its information.

Exercises

I. Translate the following words and practice their pronunciation:

Feature, intricate, muscle, cerebrum, enormous, touch, spinal, receipt, stimuli.

II. Translate the following sentences and word group into Russian:

To distinguish afferent nerve fibres from efferent ones; to distinguish the normal behavior from the disturbed one; to distinguish the natural observation method from the experimental one; I can't distinguish between the two definitions;

The ability to communicate in language; the ability to remember figures; the ability to think in an abstract way;

To be able to discover different nerve fibres; to be able to remember facts; to be able to apply the natural observation method to this investigation; to be unable to behave in a natural way;

Cognition of the world around us; to deal with the problem of cognition;

A sense organ; we have five main senses; one of our senses is the sense of hearing; our sensation is the first stage of cognition;

To have good taste; to lose the sense of taste; the tongue is the sense organ of taste; to taste the cake; it is very tasty;

Don't touch animals in the zoo; the object is very cold to the touch; he has a well-developed sense of touch;

The smell of this medicine is very unpleasant; the soup smells tasty; the nose is the sense organ of smell;

He has a good sense of hearing; he was within hearing distance; he lost his hearing during the war;

She has bad sight and has to wear glasses; he is short-sighted; my mother is long-sighted; the object is in sight; he is out of sight;

To supply the laboratory with all the necessary equipment; to supply future psychologists with all the necessary knowledge; we haven't got enough supplies to stay here much longer;

The quality of equipment; the quality of information; the quality of sounds; the quality of light;

What's your impression of the lecture? My impression about him is quite different from yours;

The animal did not respond to the sight of food; the response was unexpected; Pavlov studied dogs' responses to the sight of food; the response depends on several factors;

To deal with the human brain; to carry out an operation on the brain.

III. Translate the following sentences from Russian into English using the active vocabulary:

1. Он не может отличить одно понятие от другого.
2. Ты сможешь отличить один предмет от другого на ощупь?
3. Было невозможно различить их в темноте.
4. У него хорошие способности к математике.
5. Человек способен мыслить.
6. Психология и филология занимаются проблемой познания.
7. Процесс познания очень сложен.
8. Познание универсальных законов природы очень важно. Очень важную роль в жизни человека
9. Ощущения играют очень важную роль в жизни человека.
10. Ощущение – реакция нервной системы на тот или иной раздражитель.
11. Вкус – одно из пяти главных ощущений.
12. Язык – орган вкуса.
13. Имеется тесная связь между движением и осязанием.
14. У многих слепых хорошо развито осязание.
15. Не трогай меня!
16. Я чувствую какой-то странный запах.
17. У него хорошее обоняние.
18. Эти цветы приятно пахнут.
19. Уши – орган слуха.
20. Врач проверил и нашел, что у меня нормальный слух.
21. Зрение меняется с возрастов.
22. Необходимо регулярно проверять зрение.
23. Органы чувств дают (снабжают) нам разнообразные сведения об окружающем мире.
24. Университет дает нам всевозможные знания, необходимые нам для будущей работы.
25. Качество работы зависит от нас.
26. У него много хороших качеств.
27. Эта книга произвела на меня большое впечатление.
28. Первые впечатления – наиболее сильные.
29. Мы изучали реакцию животных на вид пищи.
30. Больной не реагировал на свет.
31. Различные отделы мозга принимают информацию от определенных органов чувств.

32. Нервные импульсы посылаются по нервным волокнам нервной системы в мозг.

IV. Choose the right word and insert it into one of the sentences given below:

to depend, to respond, response, to distinguish, ability, cognition

1. The sound of a siren is the stimulus for the … of fear.
2. Until this century almost the whole of psychology dealt with … in one form or another.
3. The eye has an immense … To accommodate itself to environmental conditions.
4. The success of a cooperative play … On the experience the children have had playing with one another.
5. Psychologists … formal from concrete thinking.
6. The animal seemed not to … to the sight of food at first.

V. Answer the following questions based on the text:

1. In what way does man differ from animals?
2. How do we get information about the world around us?
3. How many senses has man? What are the five main one?
4. What information do these senses supply us with?
5. What is the control center of our sensations?
6. What is the function of a sense organ?
7. Where are the nerve impulses sent to?
8. What are the nerve fibres which transmit information from the brain to the muscles called?
9. What are the nerve fibres which transmit impulses from the brain to the muscles called?
10. Do different parts of the brain specialize in the receipt and translation of nerve impulses arriving from particular sense organs?
11. In what part of the brain is the centre of touch situated?
12. In what part of the brain is the centre of sight situated?
13. Does the brain translate all the information it receives?
14. What information is banished?

VI. Read the following text and be ready to define the term “threshold” (порог) and to explain how threshold is experimentally measured:

Threshold

In order to establish laws about how people sense the external world, psychologists first try to determine how much of a stimulus is necessary for a person to sense it at all. How much energy is required for someone to hear a sound or to see a

light? How much of a scent must be in the room before one can smell it? How much pressure must be applied to the skin before a person feels it?

Top answer such questions, a psychologist might set up the following experiment.

First, a person (the subject) is placed in a dark room and is instructed to look at the wall. He is asked to say 'I see it' when he is able to detect a light. The psychologist then uses an extremely precise machine that can project a low-intensity beam of light against the wall. The experimenter turns on the machine to its lowest light projection. The subject says nothing. The experimenter increases the light until finally the subject responds, 'I see it'. Then the experimenter begins another test in the opposite direction. He starts with a clearly visible light and decreases its intensity until the light seems to disappear. Many trials are completed and averaged. The absolute threshold – the smallest amount of energy that will produce a sensation – is defined as the amount of energy that a subject can see about half the time.

Interestingly enough, thresholds determined in this way are not as absolute as psychologists first believed. The point at which the person says 'I see it' may vary with the instructions he is given ("Say you see it only if you are absolutely certain "versus" If there is any doubt, say you see it) or even the order in which the stimuli are presented.

VII. Speak on the topic: Sensation and the nervous system.

VIII. Translate the following text from Russian into English:

Мы узнаем об окружающем нас мире, о звуках, запахах, температуре и многих других вещах посредством органов чувств. С помощью чувств человеческий организм получает в виде ощущений информацию о внешней среде и о внутреннем состоянии организма.

Органы чувств получают, отбирают, накапливают информацию и передают ее в мозг. Мозг принимает и перерабатывает огромное количество получаемой информации. В результате возникает адекватное отражение окружающего мира и состояния самого организма.

Органы чувств дают человеку возможность видеть, слышать, осязать, обонять, чувствовать вкус. Таким образом, благодаря органам чувств человек получает самую разнообразную информацию об окружающем мире и приспосабливается к нему.

Lesson III
PERCEPTION

Active vocabulary

1. **affect**, *v* 1.влиять на 2. Волновать, трогать
2. **aid**, *v* помогать
aid, *n* помощь
3. **awareness**, *n* осознание
be aware of, *v* осознавать
be unaware of, *v* не осознавать
4. **consider**, *v* рассматривать, обсуждать, обдумывать 2. Проявлять уважение, считаться, 3. Принимать во внимание, учитывать.
consideration, *n* рассмотрение, обсуждение 2. Соображение; to take into consideration принять во внимание, 3. Внимание, предупредительность, уважение.
5. **determine**, *v* 1.определить, устанавливать, 2. Детерминировать, обуславливать.
determination, *n* решимость, решительность 2. Определение, установление.
6. **distort**, *v* искажать
distortion, *n* искажение
7. **identify**, *v* 1. Отождествлять, идентифицировать 2. Устанавливать, определять
identification, *n* 1. Идентификация, распознавание, установление подлинности, отождествление 2. Определение, выяснение.
8. **influence**, *v* влиять,
influence, *n* влияние
9. **inherit**, *v* наследовать, унаследовать
inherited, *adj* врожденный, унаследованный
inheritance, *n* 1. Наследственность 2. Наследование 3. Наследство, наследие
heredity, *n* наследственность
hereditary, *adj* наследственный, врожденный
10. **learning**, *n* научение
11. **measure**, *v* измерить, оценивать
measure, *n* мера, степень
measurement, *n* измерение
12. **perception**, *n* восприятие, осознание, понимание
perceive, *v* 1. Воспринимать 2. понимать, осознавать
13. **relation**, *n* 1. Отношение, связь, отношения 2. Pl отношения 3. Родственник, родственница
relationship, *n* 1. Отношение, взаимоотношение, связь 2. Родство

relate, *v* 1. Устанавливать связь или отношения 2. Относиться, иметь отношения

14. **total**, *adj* .весь, целый, общий, совокупный 2. Полный, абсолютный 3. Тотальный, всеобщий.

Text

PERCEPTION

What we sense we interpret, and this psychological process is called "perception". By perception we mean the process by which we become aware of and interpret or identify the sensations we receive. There are a lot of factors that influence our perceptions. Inheritance seems to be one factor. Depth perception, for example, is a response that is found in very young children, and also in new-born animals. Learning is another influence. Perception depends on what you are used to, what you expect, and the contest of your experience.

Our learning experiences also help us to understand the differences in the sensations we receive.

Inheritance and experience are the only factors which affect our understanding of the stimuli from our senses. All the different cues about the stimulus will determine the way we interpret it. The surrounding cues and features of the environment, derivable from all our different senses, collectively, contribute to the total process of perception. They may aid or distort our knowledge of the world.

Consider the two lines in the figure below and decide which is longer.

The top one with the arrow ends seems to be shorter, but if you measure them you will find them to be exactly the same in length. This illustrates that the total context of an object we are observing may change our perception of it. The relation between the stimulus – in- the context and the viewer causes the perception to be incorrect. This sort of phenomenon is sometimes called a visual illusion. The movement of the pictures of the cinema, where the still pictures are successively exposed to the eye to give the effect of movement, is also, in an obvious sense, illusory.

Perception is influenced by the condition or state of the person at the time. We tend to perceive things as we need or want to be rather than as they are. Standing on the street corner and waiting for someone we know, we find that we may make a number of errors of recognition. We think a person is our friend, and he is a complete stranger. The tendency to interpret things or people in a way that satisfies our motives or needs is typical of the manner in which our mental processes operate in perception. The reverse can also happen. We may not notice someone we are very familiar with, simply because we are not expecting to meet them.

The process of perception is complex and applies to the whole range of sensations. The field of visual perception happens to be the one which has been most frequently investigated and therefore most usefully discussed.

Exercises

I. Read the following nouns with the suffix-(a)tion, give the verbs from which they are derived, enumerate those which have similar Russian parallels:

Specialization, organization, generalization, stabilization, mechanization, automatization, recognition, cognition, qualification, identification, specification, modification, application, contribution, correction, description, reception, perception, investigation, negation, direction, selection, distortion, connection, examination, definition, stimulation, imagination, action, concentration, impression, transmission, protection, collection, complication, information, consideration, explanation, observation, suggestion, reproduction, foundation.

II. Translate the following sentences and word groups into Russian:

perception of depth; perception of color; visual perception; to perceive movement; to perceive form; we perceive those parts of the environment that interest us;

to be aware of the world around us; to be aware of noise; to be unaware of hunger; to be aware of the artificial conditions of the experiment; awareness of difficulties; awareness of danger;

to influence the results of the experiment; to influence the animal's behavior; the influence of one's past experience on development; the influence of one's knowledge of the subject;

to inherit good sight; inherited qualities; inherited behavior; to study the role of inheritance;

to affect one's perception; to affect one's hearing; to affect one's ability to understand the problem; to affect the course of the experiment;

to determine experimental conditions; to determine human activity; determination of the effect of a medicine on a patient; determination of the influence of the environment on man's behavior;

to distort visual perception; to distort evidence; to distort the results obtained; perceptual distortion; the distortion of smb's views;

the total number of persons; the total population; the total sum;

relationship between children and parents; relations between the experimenter and his subjects;

let's consider the problem; all the aspects of the problem were considered in the course of the discussion; to take into consideration the possibility of some visual distortion; the question will be under consideration next time;

to aid the investigation; to ask for aid;

the learning process; the scientific laws of learning; the physical basis for learning; industrial learning; the physical basis for learning; instrumental learning;

to measure the distance; to measure the animal; to take the measurements of its brain; the psychological methods are procedures for psychological measurements; measurement means the description of data in terms of numbers; the difficulties of psychological measurements have been very great.

III. Translate the following sentences from Russian into English using the active vocabulary:

1. Мы воспринимаем окружающий нас мир посредством органов чувств.

2. У тебя искаженное восприятие формы.

3. Испытуемый не осознавал присутствия экспериментаторов.

4. Влияние наследственности в этом случае ясно осознавалось всеми.

5. Сознание опасности заставило его поспешить.

6. Бихевиоризм оказал большое влияние на психологию Запада.

7. Связь между развитием и научением – важная психологическая проблема.

8. Мы должны тщательно изучать научное наследие Сеченова и Павлова.

9. Наследственность – важный фактор, который должен учитываться психологами.

10. Он многое унаследовал от своих родителей.

11. Человек сам влияет на окружающий мир.

12. Прошлый опыт, наследственность, окружающая среда и другие факторы влияют на восприятие.

13. Внешние условия не полностью предопределяют поведение человека.

14. Мы должны были определить время реакции трех испытуемых.

15. Определение времени реакции было основной задачей нашего эксперимента.

16. Вы искажаете факты.

17. Зрительные иллюзии – это искажения в зрительных восприятиях.

18. Общее число испытуемых в нашем эксперименте – 20 человек.

19. Итоговые цифры будут приведены в конце статьи.

20. Лазурский изучал связь человека с окружающей средой и обществом.

21. Взгляды на проблему взаимосвязи между абстрактным и конкретным на различных стадиях научения являются разными.

22. Существует тесная связь между психологией и философией.

23. Давайте теперь рассмотрим вопрос о влиянии наследственности на восприятие.

24. Рассмотрение этого вопроса оказалось полезным.

25. Я обдумываю ваше предложение.

26. Какой вопрос будет рассматриваться следующим?

27. Давайте рассматривать другую область психологии.

28. Научные основы научения были разработаны Павловым, Торндайком и другими исследователями.

29. Одно из определений «научения» следующее: научение – есть изменения в поведении как результат прошлого опыта.

30. Если он болен, ему надо измерить температуру.

IV. Choose the right word from the box and insert it into one of the sentences given below:

experience, to be aware, relationship, to determine, distorted, to contribute, to affect

1. Many scientific disciplines … to the scientific understanding of behavior.

2. We attempted to find out, from a psychological point of view, … Between the two types of perceptions.

3. It is found out that psychological functions such as motivation, perception, intelligence and learning do not have simple … with chronological age.

4. Nowadays people … of the importance of social and psychological research.

5. Experiments show that the child's behavior depends on his earlier…

6. What we remember is often a seriously … version of what we originally experienced.

7. Many factors … productivity.

8. There is evidence that emotional factors can … perception.

V. Answer the following questions to the text:

1. What is perception?

2. What factors may influence perception?

3. What does perception depend on?

4. Do our learning experiences help us to interpret our sensation?

5. How may the features of environment influence the total process of perception?

6. What causes perception to be incorrect?

7. The field of visual perception has been most fully investigated, hasn't it?

VI. Choose one of the following topics to speak about:

1. Perception

2. New developments in the investigation of perception

3. Experiments you made when studying perception

VII. Translate the following text from Russian into English:

Восприятие – это процесс осознания и отождествления получаемых ощущений.

Благодаря восприятию мы осознаем предмет в целом, а не только его отдельные свойства как то имеет место в случае ощущений.

На наше восприятие влияют факторы. Среди них следует упомянуть: наследственность, прошлый опыт, окружающую обстановку, мотивы и другие.

Все факторы могут влиять на восприятия, либо искажать восприятие.

Все виды восприятия можно разделить на несколько групп согласно тому, какие анализаторы играют главную роль в восприятии.

Среди них различают: зрительные, слуховые, вкусовые, осязательные, обонятельные, кинестетические.

Лучше всего изучено зрительное восприятие.

Lesson IV
SIMPLE LEARNING

Active vocabulary

1. **according to**, prep. в соответствии с, согласно
2. **account**, v (for) объяснять
3. **acquire**, v приобретать; получать; to – knowledge приобретать знания
acquired, adj. приобретенный (ответ, признак)
acquisition, n приобретение
4. **attempt**, n попытка, проба; to make an – сделать попытку
attempt, v пытаться, пробовать, сделать попытку
5. **complicated**, adj сложный, трудный для понимания
6. **condition**, v 1. формировать условный рефлекс 2. определять, регулировать, обусловливать
condition, n 1. состояние 2. условие, обстоятельство
conditional, conditioned, adj. условный
conditioning, n 1.формирование условных рефлексов, обусловливание 2.научение; higher-order–формирование условных рефлексов более высокого порядка
7. **define**, v определять, давать точное определение
definition, n дефиниция, определения
8. **digest**, v 1. переваривать (пищу) 2. усваивать, воспринимать, овладевать
digestion, n 1. пищеварение, усвоение пищи 2. усвоение (знаний, фактов и т.п.)
digestive, adj. пищеварительный
9. **diminish**, v затухать, слабеть, уменьшать(ся), убавлять(ся)
10. **discover**, v открывать, делать открытие
discovery, n открытие
11. **eliminate**, v 1. выделять, удалять из организма 2. устранять, ликвидировать, уничтожать
elimination, n 1. устранение, исключение 2. физиол. экскреция, выделение, удаление из организма
12. **event**, n 1. событие, эпизод 2. случай, 3. Явление
13. **evidence**, n 1. свидетельство, данные, факты 2. доказательство
14. **habit**, n привычка, навык
15. **inborn**, adj. врожденный
16. **occur**, v происходить, иметь место
occurrence, n случай, происшествие
17. **perform**, v исполнять, выполнять
performance, n 1. исполнение, выполнение, поведение 2. производительность, работа
18. **present**, v предъявлять
presentation, n предъявление

19. **saliva**, n слюна
salivate, v 1, выделять слюна 2. вызывать слюнотечение
salivation, n слюноотделение 2. Слюнотечение
20. **sequence**, n последовательность (порядок следования), ряд
21. **sign**, n 1. знак 2. сигнал 3. симптом, примета, признак
signify, v означать, значить
22. **stimulus**, n (pl.stimuli) стимул, раздражитель
stimulate, v стимулировать, возбуждать
stimulation, n стимуляция, возбуждение., раздражение
23. **strengthen**, v подкреплять, усиливать(ся), укреплять(ся)

Text

SIMPLE LEARNING

Learning may be defined as changes in behavior as the result of past experience.

Psychologists have formulated a number of theories about how learning takes place and have performed a great deal of search with humans and animals in an attempt to gain a better understanding of the process.

One of the most important studies of learning, like many discoveries of science, was initiated almost by accident. At the beginning of this century a Russian psychologist named Ivan Pavlov was continuing his research on the reflex processes associated with digestion. While observing the behavior of the dog on which he was working as a laboratory subject, he noticed that the flow of the saliva in the mouth occurred not only when the food was placed in the dog's mouth, but even before, at the sight of the food. The dog's responses to the food in the mouth were considered automatic reflex responses that are inborn, but the response to the sight of food was a learned, or conditioned response. Pavlov re-directed his efforts to explore this response. He found that the dogs could be taught to react in the same way (by salivating) not only to the sight of food but to the sound of a bell, the tickling of metronome, or even the rotaring motion of a disk. Ringing the "dinner bell" or using any other signal that the dog associated with the food, would cause the animal to respond in almost the same way as if the food was placed directly into his mouth. He accounted for the learning process according to the following sequence of events.

First: a stimulus applied, such as a bell being rung
Immediately after: meat placed in the dog's mouth
Reaction: the dog responded by salivating

By repeating this sequence a number of times, the dog will now salivate when the bell alone was sounded. The sequence of signal - food – response became:

signal – response.

The food was called the unconditioned stimulus, as it was a stimulus that caused an automatic reflexive unconditioned response. The signal, which was the sight of the food or a bell, was called the conditioned response. The distinction was

made between the natural (unconditioned) and learned response, as they were not exactly the same. The learned response seemed to be more complicated, as the dogs also acted with an air of expectancy and uncertainty whenever the signal alone was made. The signal – response sequence for learning is called "classical conditioning".

There is a wide spread feeling that all learning is built up by the same process of association of such symbols or signs in close relationship with the things that they symbolize or signify. Added evidence for this viewpoint is supplied by studies on higher-order conditioning. Second-order conditioning, for example, is accomplished in approximately the following manner. The animal or person is first conditioned to respond to a signal like a bell in the way described above. The original signal is now paired with another signal like a light. The training sequence is:

light – bell – response

Again, after a suitable number of such combinations the subject will now respond to the light as he did to the bell. The habit of responding to the signal can be strengthened by only an occasional presentation of the food or unconditioned stimulus. Further higher-order associations can be made by pairing a word with the light, and so on. This is a gradual process of building up the learning of associations that link together many different signals or stimuli.

Just as in the original experiments the signals become associated with the food by their close association, that association can be extinguished by reversing the procedure. If the bell is sounded frequently and the food is never presented, the salivation response will gradually diminish and eventually stop.

After a while, however, the bell will be found still to cause the original conditioned response although it had seemed to be extinguished. Further "bell without food" pairings are necessary before the response is completely eliminated. The organism generally takes longer to "unlearn" the response that it did to learn it.

Many psychologists took up the study of this scheme of learning after 1904 when Pavlov was awarded a Nobel Prize in Medicine for his work on the digestive processes.

Exercises

1. Translate the following words and practice their pronunciation:

To initiate, event, to associate, sign, procedure, digestion, reflex, to signify, to salivate, saliva, approximately, eventually, digestive, sequence, uncertainty.

2. Form nouns from the given adjectives according to the following pattern:

important – importance
different - difference

irrelevant – permanent –
dependent – independent –

evident –	different –
present –	significant –
absent –	excellent –
ignorant –	patient –

3. Form adjectives from the given verbs according to the following pattern:

to predict – predictable – unpredictable

to think –	to comfort –
to suit –	to rely –
to observe –	to translate –

Translate the words into Russian.

4. Translate the following sentences and words groups into Russian. (The exercise is to be done orally)

to **present** a stimulus; to present several figures; at the first **presentation**; presentation of a food stimulus; presentation of several objects;

an **attempt** to contribute to the investigation of the problem; an attempt to determine the future development of the organism;

to **discover** some dependence of perception on learning experiences; to discover the influence of the environmental conditions on one's behavior; the **discovery** of visual illusions; the discovery of different kinds of nerve fibres; discovery of the role of the brain in translating sensation;

the flow of **saliva** was measured several times; the flow of saliva occurred at the sight of food; the animals began to salivate at the sight of food; the **salivation** stopped at last; the scientists watched the process of salivation;

the response **occurred** at the sight of food; the event occurs quite often;

inborn qualities; an inborn disease; an inborn ability to do smth.

to **acquire** knowledge; to acquire new habits; to acquire conditioned reflexes; to acquire the ability to perceive things at a single presentation;

to acquire new **evidence**;

to **condition** an animal; classical **conditioning**; instrumental conditioning; the techniques of a conditioning situation;

I can't **account for** his absence; this accounts for his behavior; experimental conditions may account for some distortion of evidence;

a **complicated** problem; a complicated relationship; a complicated structure of human organism;

a **sequence** of events; a sequence of stimuli; to remember the sequence of sounds;

to forget the sequence of signs; signs and symbols; I don't know what these signs signify; unknown signs; complicated signs; to find out what the evidence signified; to learn what the figures signified;

to be in the **habit** of visiting him every day; bad habits; a habit acquired long ago; I can't account for this habit of mine;

to **strengthen** a response; to strengthen habits;

to present two **stimuli** at the same time; a conditioned stimulus; an unconditioned stimulus;

to **diminish** the difference; to diminish the results of the measurements; to diminish the influence of the inborn characteristics;

to diminish the importance of the **discovery;**

to **eliminate** a habit; to eliminate a law; to eliminate the difference between them; to eliminate the distortion; to eliminate a conditioned response;

define the word; a **definition** of scientific methods of investigation; a definition of psychology as a science;

to **perform** an experiment; man's **performance**; the animal's performance in an artificial environment;

to give **evidence**; selection of evidence; evidence of a person's past behavior.

5. Translate the following sentences from Russian into English using the active vocabulary:

1. Испытуемому предъявили восемь предметов разного цвета и формы.
2. Он запомнил пять предметов с первого предъявления.
3. Этот эксперимент представляет большую трудность для нас.
4. Психолог Теплов предпринял попытку выяснить влияние типа нервной деятельности на структуру способностей человека.
5. Это была первая попытка исследовать механизм ощущений.
6. Павлов открыл механизм образования условных рефлексов.
7. Это открытие имеет огромное значение для будущего.
8. Открытия в области педагогической психологии успешно применяются в практике преподавания.
9. При виде пищи у собак начиналось слюноотделение.
10. Слюноотделительный рефлекс – один из видов безусловных рефлексов.
11. Павлов измерял количество слюны, выделявшейся у собак при виде пищи.
12. Слюна способствует переработке пищи.
13. Первый ответ был (произошел) случайным.
14. Слюноотделение происходило не только тогда, когда пища была во рту, но и ранее, при виде пищи.
15. Нужно отличать врожденные ответы от приобретенных.
16. Слюноотделительный рефлекс в ответ на пищу во рту – один из примеров врожденного ответа.

17. Дети способны усваивать абстрактные понятия в раннем возрасте.

18. Знания по анатомии и физиологии, приобретенные в университет, совершенно необходимы будущему психологу.

19. В течение жизни человек приобретает огромное количество знаний

20. Научное изучение формирования условных рефлексов было начато Павловым.

21. Условные рефлексы формируются на базе безусловных.

22. Такое поведение животного может быть объяснено тем, что у него сформирован условный рефлекс на звонок.

23. Различия в данных у разных испытуемых объяснялось разницей во времени восприятия.

24. Формирование условных рефлексов – очень сложная задача.

25. Задание, предъявленное испытуемому, было очень сложным.

26. После завершения опытов пришлось провести очень сложные измерения.

27. В ходе опыта экспериментаторы соблюдали строгую последовательность предъявления объектов.

28. Такой ход событий оказался совершенно неожиданным для нас.

29. Знаки – продукт социальной жизни.

30. Слово выполняет функцию знака.

31. Я не знаю, что это слово означает

32. У меня привычка читать вслух.

33. В ходе эксперимента изучались привычки и поведение детей в возрасте 6-7 лет.

34. После нескольких подкреплений условный рефлекс был усилен.

35. Пища – безусловный стимул, вид пищи – условный стимул.

36. Чтобы укрепить мышцы, вы должны делать физзарядку каждое утро.

37. Условные стимулы были спарены с безусловными.

38. Без подкрепления безусловный рефлекс стал постепенно угасать.

39. По мере того как человек стареет, его силы ослабевают.

40. Трудно избавиться (уничтожить) от плохих привычек.

41. От опыта к опыту внимание ослабевало.

42. Для проведения этого опыта важно устранить всякие внешние шумы.

43. Все отрицательные влияния были устранены.

44. Дайте определения экспериментального метода.

45. Определение этого понятия следующее.

46. В течение дня человек совершает много движений.

47. Нужно проверить эти показания еще раз.

48. В результате проведенных экспериментов ученые получили новые свидетельства специализации различных отделов мозга по приему сигналов от органов чувств.

49. Данные, полученные в результате наблюдения за детьми, о том, как у них формируется абстрактное мышление, очень интересны.

50. В последнее время наши психологи собрали много интересных данных по этой проблеме.

51. Нет резкой линии, разграничивающей врожденное поведение от приобретенного.

52. Научение – это приобретение знаний и навыков.

53. На поведение могут влиять привычки, приобретенные в течение жизни индивидуума.

54. Чем сложнее нервная система, тем пластичнее поведение.

55. Более поздние исследования показали, что научение – это гораздо более сложный процесс, чем ранее предполагалось.

56. В значительной степени коммуникация людей основана на привычках и навыках.

6. Choose the right word from the box and insert it into one of the following sentences:

to acquire, to present, sign, to strengthen, to occur, to condition

1. The visible….of ageing appear earlier in some individuals than in others.
2. Even a temporary isolation from the group…..the tendency towards conformity.
3. Experiments have demonstrated that infants as young as ten days may be….to suck at the sound of a buzzer if this is frequently…..just before the bottle is inserted in the mouth.
4. In prematurely born infants of 32 weeks responses to light, sound and even taste may…. .
5. In the book “Personality and Psychotherapy” J. Dollar and N. Miller tried to apply laws of learning to the problem of how neurotic behavior is ….. .

7. Pay attention to the Subjective Infinitive Construction, underline it in the following sentences, write out the verbs with which it is used, translate the sentences into Russian.

1. In humans and in higher animals the most important cortical centres for the solution of certain kinds of problems appear to be the frontal lobes.
2. The rate of learning and degree of motivation are thus seen to be closely related.
3. As the science of psychology develops, greater emphasis may be expected to be given to long-term experiments.
4. The interest in child psychology is certain to be permanent.
5. The event is supposed to have happened about two centuries ago.
6. The reports seemed to indicate that learning was maximized if the reinforcement immediately followed the response that was being made.

7. In many cases the observation of a person's behavior is recommended to be carried on in the natural environment.

8. The animal is unlikely to fall asleep in this conditions.

9. Some factors are known to contribute to human ageing.

10. When the subject has attained some previously determined level of skill or efficiency in performing the task, he is said to have reached the criterion of mastery.

11. The employment of the genetic method proved to be extremely useful. From the age of about two years, children are found to experience increasingly fears of darkness and solitude.

12. The young of many species of mammals appear to be almost totally helpless at birth.

13. The weight of evidence seems to support the hypothesis, at least for objects that are not very simple or familiar.

8. Translate the following sentences paying special attention to the meanings of ***the same, the only, as well as, at least***

1. The growth of formal thinking **as well as** the age at which adolescence occurs depend on social and neurological factors.

2. Five and ten years later we may repeat our measurements using **the same** tests.

3. Conditions which produce forgetting in short-term memory are really **the same** as those which cause forgetting of more distant events in long-term memory.

4. In many respects prospects for research on ageing are **the same** as they were 10 or 15 years ago.

5. The research psychologist needs **at least** a moderate mastery of the ordinary statistical operations.

6. Salivary conditioning **as well as** other conditioning techniques have been used for this purpose.

7. Psychology is not **the only** science that deals with man.

8. Translate the sentences paying attention to different grammatical functions and meaning of the words one:

1. In the degree to which all independent variables are identified and the irrelevant ones controlled, few studies equal the one by Howland.

2. The only very large differences were the ones indicating that the control group learned the poetry and the prose more quickly than the experimental group.

3. One of the simplest psychophysical methods is called the method of reproduction.

4. In most experimental work, a major requirement is to keep conditions constant expert for one factor, which is systematically varied.

5. Looking at the problem from another point of view one can say that intelligence is very important for a person's adjustment.

6. To understand aggression one will have to realize that tension is only one of the factors which determine whether or not an aggressive action will take place.

7. In a new job we forget many details of the old one.

8. One cannot completely ignore unsolved theoretical problems of psychology.

9. Although correlations do not give one much insight into behavior, they allow one to make predictions.

10. One of the main puzzles in the psychology of perception is the problem of stimulus equivalence.

9. Answer the following questions based on the text:

1. How many learning be defined?
2. Who was the first to start studies of learning?
3. Did Pavlov intend to investigate the problem of learning at the very beginning of his experimental research?
4. What problem was he interested in?
5. What is an inborn response?
6. What is a conditioned response?
7. What kind of responses did Pavlov pay special attention to?
8. What is the sequence of events in the learning process?
9. In what case would the dog salivate when the bell alone was sounded?
10. What are the two types of stimuli?
11. What is the second-order conditioning?
12. How can the habit of responding to the second-order signal be strengthened?
13. What psychological process is learning based on?
14. In what case do conditioned responses diminish and eventually stop?

10. Speak on one of the following topics:

1. Pavlov and his contribution to psychology
2. Classical conditioning

11. Translate the following text into English, then retell it:

Великий русский физиолог Павлов внес большой вклад в развитие психологии. Он открыл существование двух сигнальных систем. Образ предмета (зрительный, слуховой и т.д.) является для животного сигналом какого-либо безусловного раздражителя, что вызывает изменения по типу условного рефлекса. Как известно, условный рефлекс имеет место тогда, когда какой-либо условный раздражитель (например, свет) сочетается с безусловным раздражителем (например, пищей). В этом случае в головном мозгу образуется временная нервная связь между центрами (зрительным и пищевым), и два вида деятельности животного – зрительная и пищевая – оказываются объединенными. Свет

для животного становится сигналом пищи, вызывающим слюноотделение. Все поведение животного регулируется сигналами, которые были названы Павловым сигналами первой сигнальной системы.

У человека сигналы первой сигнальной системы также играют весьма важную роль, регулируя и направляя его поведение. Но у человека имеется вторая сигнальная система, которой нет у животных. Сигналами второй сигнальной системы являются слова, произносимые, услышанные, прочитанные. Слово – это «сигнал сигналов». Будучи понятным человеку, слово управляет его поведением, ориентирует в окружающем мире, а оставшись непонятным, слово может воздействовать на человека лишь как сигнал первой сигнальной системы или вообще не вызывать никакого ответа.

Lesson V
SIMPLE LEARNING

Active Vocabulary

1. **avoid**, v избегать
avoidance, n избегание
2. **cause**, n причина
cause,v причинять, вызывать, быть причиной
3. **goal**, n цель
4. **level**, n уровень
5. **lever**, n рычаг
6. **memory**, n память; short-time–кратковременная память; long-term–долговременная память
memorize, v запоминать
memorization, n запоминание
7. **pellet**, n пилюля, шарик
8. **punish**, v наказывать
9. **reason**, n причина, разум
reason, v размышлять, рассуждать
reasonable, adj. разумный, рассудительный
reasoning, n 1. рассуждение, логический ход мысли 2. аргументация, доводы
10. **refer** (to), v ссылаться (на кого-либо., что-либо)
reference, n 1. ссылка (на кого-либо, что-либо) 2. сноска (в книге) 3. рекомендация, отзыв; лицо, дающее рекомендацию
reference list, n библиография
11. **reinforcement**, n подкрепление
12. **reward**, n награда
reward, v награждать
13. **scheme**, n схема, план, программа, структура
14. **sense**, n 1. чувство, ощущение 2. pl. сознание, рассудок common--- здравый смысл 3. значение, смысл
15. **solve**, v решать, разрешать (a problem, a difficulty, a puzzle)
solution, n решение, разрешение (проблемы и т.п.)
16. **subject-matter**, n 1. содержание, тема (книги, лекции) 2. предмет (дискуссии, науки)
17. **trial**, n проба, испытание
trial-and-error method, n метод проб и ошибок
18. **voluntary**, adj. произвольный
involuntary, adj. непроизвольный

Text

SIMPLE LEARNING

Many new facts have been found out since the time of Pavlov's discovery.

It is important to mention that we may learn to avoid certain signals, signs or symbols just we can be conditioned to respond positively towards others. If a child is presented with a toy, but is suddenly startled at at the same moment as the toy is offered, that child might very likely be frightened every time the toy is offered to him. Only after many trials when the toy is presented and the startling stimulus is absent will the child cease to be afraid.

A different type of learning, sometimes called operant conditioning was described most recently by B.F. Skinner of Harvard University. He examined the way learning take place when the behavior is spontaneous and not at the reflex level, as it is in classical conditioning. Skinner constructed a box which has inside it a lever that can be operated, a food tray, and a buzzer. When a typically hungry animal is placed inside this box it normally wanders around since its desire for food activates it. In this searching, random behavior, the animal may accidentally depress the lever. The lever operates a machine that delivers food in the form of the pellets that drop into a tray. When the animal finds the pellet it is likely to try to depress the lever again and be rewarded with further food. After a short time, and a number of rewards or reinforcements like this, the animal learns to press away in order to obtain food. This learning scheme, where the animal operates the lever to satisfy the need, is essentially:

Response – reward

We should notice that the reward, or the reinforcement, comes after the response has been made. The first correct response occurs almost purely by chance. In classical conditioning, by contrast, the food reward came before and the automatic response followed on. Both operant conditioning are association schemes: classical conditioning being an association between a signal and response; operant conditioning being an association between a response and a reward. The first method is connected with automatic, reflective type of response; the latter type seems to be connected with voluntary modes of action and behavior.

We mentioned earlier that the Skinner box had a buzzer connected to it but it was not employed. If we change the situation now so that this buzzer is connected with the food machine so that it sounds each time the lever is depressed, and the animal receives a food reward, the buzzer will seem to take on the same rewarding qualities and associations that were also attached to the food. When the well-fed animal is later put back in the box it will push the lever a few times, as if it is a result of a pleasantly familiar past activity, and then it will ignore it. If, however, the buzzer sounds with each press of the lever the animal will press many times, as the buzzer seems to be its own reward. The behavior which is elicited for the "buzzer" reward alone seems to be a secondary reinforcement. If we now want to teach this animal another kind of response, such as the pressing of a button, all that has to be done is to

connect up the button with the buzzer. When the button is pressed for the first time accidentally, the buzzer will sound. Thereafter we can observe the development of this new response to the secondary reinforcement. Third-order associations, and even higher ones, can be developed in this way.

How do we develop many complex chains of habits that we make? They are probably learned by a combination of two learned conditions, i.e.:

a) **Signal – response**

and b) **Response – reward**

thus **Signal – response – reward**

Thorndike's Law of Effect summarizes this course of events. It states that satisfying experience tend to be repeated when the organism can bring it about. Also, painful states are avoided whenever possible. The reward may be a pleasurable or need-satisfying experience, or it may be some event that is an avoidance of punishment. These signals, which were paired with, or associated with, rewards that originally satisfied our motives or needs later tend to take on their own reinforcing qualities.

It has been known for along time that human memory is associative. One thing reminds us of another for various reasons – either they occurred together, or they refer to the same subject-matter in some sense. Human learning is only partly a matter of associations of responses acquired through classical or operant conditioning experiences. Our acquired behavior seems to be too complex to be exclusively accounted for by these two types of causes.

Trial-and-error method is an approach to the solving of problems and the search for ways to satisfy motives. Trial-and-error is the beginning of the process that soon becomes non-random. W.Koehler, a German psychologist who worked in America, demonstrated the important role of a non-random scheme of learning, called "insight". We mean by "insight" the solution of a problem by combining previously learned experiences or solutions to problems in a new way. It is the formation of a new association for the organism trying to solve a problem – or to reach a goal.

Kohler made the following experiment. He placed a chimpanzee in a room which had a banana suspended from the ceiling. Scattered around the room were a number of packing boxes. The chimp normally would try to get the banana by leaping up, but the food was too high for him. After many jumps and pauses the animal would suddenly act as if he realized the solution. He would put the boxes one on top of the other, until the pile was high enough for the chimpanzee to climb up and get the reward.

In this and many other problems the chimpanzees act as if they developed an understanding of the behavior necessary for the solution of the problem. In later studies it was clear that this type of problem-solving would not take place if the animal had not had previous experiences with boxes. In effect, for this problem to be solved, an old response (experience) had to be applied in a new way, through insight. Learning to solve problems by remembering and using previous experiences in this way is very much a human method for achieving our goals and objectives. If the new prob-

lem is important to us, then our achievement of the solution may be rewarding indeed.

To sum up, all different forms of learning have some element of association in them, and some element of reinforcement. Thorndike's Law of Effect accounts for this course of events, although learning may sometimes seem much more complicated than these conditioning scheme would suggest.

Exercises

1. Practice words for pronunciation:

trial, spontaneous, accidentally, essentially, chimpanzee, pellet, reward, scheme, previous.

2. State with what nouns or adjectives the following verbs are correlated. Give the verbs which have similar Russian parallels:

Summarize, memorize, nationalize, generalize, activize, collectivize, modernize, centralize, characterize, organize, disorganize, philosophize, sterilize, systematize, theorize, economize.

3. Translate the given nouns with the suffix **– ment** and give the verbs which they are derived from:

Development, employment, movement, achievement, reinforcement, excitement, punishment, fulfillment, treatment, agreement.

4. Translate the following sentences and word groups into Russian. (The exercise to be done orally)

a low **level** of knowledge; at the reflex level; at the level of the central nervous system;

to press a **lever** to get food; the box has a lever;

to act so as to get a **reward**; a wish to get a reward;

partial **reinforcement**; occasional reinforcement; food reinforcement;

a **trial** to memorize all the objects at a single presentation; a trial to determine the reaction time; a trial to measure visual perception;

to **avoid** punishment; to avoid making mistakes; to avoid errors; **avoidance** of other children's company; avoidance of unpleasant emotions;

to **punish** the boy for missing the lesson; to punish children for bad behavior; physical **punishment**; moral punishment;

he has a good **memory**; experiments on memory; to **memorize** events; to memorize data; to memorize figures;

what's the **reason** for your absence?; I was late for no reason at all; listen to reason!; I was late for no reason at all; listen to reason!;

to **refer** to some faboratory data; to refer to some scientists who have investigated the problem;

you are right in some **sense**; there is no sense in his words; His reasoning does not make sense;

what was the **cause** of your absence?; the cause of his illness is unknown; hunger **caused** the animal to look for food; nervousness caused her to forget what she had learnt;

it's necessary to **solve** the task as soon as possible; to solve the problem we must carry out a number of experiments; the **solution** to the problem is of great importance;

to achieve a **goal**; to enter the University was his goal.

5. Translate the following sentences from Russian into English using the active vocabulary:

1. Сначала пришлось определить уровень развития способностей наших испытуемых.

2. Он провел исследование на очень высоком уровне.

3. У этого студента очень низкий уровень знаний.

4. На нашем настоящем уровне мы вряд ли сможем быстро решить эту проблему.

5. В первый раз собака нажала на рычаг случайно.

6. Чтобы получить пищу, животное должно нажать на рычаг.

7. Многие дети учатся только чтобы заслужить поощрение родителей.

8. Работа сама по себе награда, если ее любишь.

9. После ряда подкреплений собака стала реагировать на звонок, как она обычно реагировала на пищу.

10. Для выработки условного рефлекса необходимо подкрепление его безусловным стимулом.

11. Я хотел бы избежать этого неприятного разговора.

12. Хорошее зрение, слух и обоняние помогают животным избегать опасности.

13. Он избегает всякой компании.

14. Ребенок молчал, боясь, что его накажут.

15. До сих пор в некоторых американских школах применяются физические наказания.

16. К следующему уроку нам надо запомнить 20 слов.

17. Память меняется с возрастом.

18. Механизм памяти очень сложен и во многом еще не исследован.

19. В памяти хранится прошлый опыт.

20. У меня нет причин быть недовольным его поведением.

21. Мне очень странно слышать это от вас. Вы говорите, что избегаете встречи с ним. У вас есть какие-нибудь причины для этого?

22. Первая попытка была неудачна.

23. Докладчик сослался на последние экспериментальные данные.

24. Его слова могли относиться только ко мне.

25 Автор статьи делал ссылки на многих зарубежных последователей.

26. В некотором смысле эти два процесса сходны друг с другом.

27. В каком смысле (значении) употреблено это слово?

28. В том, что он говорит, есть смысл.

29. Шум может вызвать искажения в восприятии.

30. Мать не знала причины болезни сына.

31. Частые наказания вызывали у сына страх перед отцом.

32. Выготский очень оригинально решил проблему эгоцентрической речи.

33. Это исследование очень важно для решения кардинальных проблем теории психологического развития.

34. Чтобы решить эту проблему, надо провести многочисленные экспериментальные исследования.

35. Согласно Бернштейну, цель – это закодированная в мозгу модель будущего.

36. Исполнение будет более успешным, если испытуемый имеет перед собой цель, к достижению которой он стремился.

37. После нескольких попыток обезьяна научилась узнавать предметы.

6. Choose the right word from the box and insert it into one of the following sentences:

to reward, punishment, reinforcement, memory, reason, to refer, to cause

1. Independence is stimulated by the mother's encouragement especially when she openly…..it by kissing the child/

2. ……..is used to strengthen different responses.

3. We need not……to the responses of the youngest subjects, for they have already been described.

4. In recent years there have been a large number of investigations of……for events which have occurred within the few seconds or minutes.

5. Conditions which produce forgetting in short-term memory are really the same which…..forgetting in long-term memory.

6. The …….often given for transferring older worker are that the work is too difficult, involves long hours or night work, etc.

7. The threat of…….increases the tendency to fear.

7. Translate the sentences underlining the Object-with-the-Infinitive constructions in them:

1. Repeated experiences in different situations which necessitate different forms of social response will enable the child to develop an adaptable personality.

2. The general technique for investigating subjective phenomena – thought, images, feelings, sensations, perceptions – has been to ask the subject to report on these experiences.

3. The book enables the reader to form some opinion about the types of problems which the modern psychologist investigates.

4. Other experiments have found that anxiety makes subjects take longer to react.

5. You have seen animals learn to press the lever to get a reward.

6. Some laboratory workers forced rats to overeat by injecting insulin.

7. In 1928 Einstein advised Jean Piage to study the psychological formation of the concept and the perception of time.

8. We have already seen the use of such electrodes stimulate some areas of the brain.

8. Complete the following sentences using the Objective-with-the-Infinitive construction in them:

1. I don't want (чтобы испытуемые знали цель эксперимента).
2. I saw (как обезьяны реагировали на звонок).
3. We all know (что он большой специалист в области детской психологии).
4. I'd like (чтобы Вы помогли мне).
5. We expect (что Вы расскажете нам о своих результатах).
6. I wish (чтобы Вы приняли участие в работе нашего семинара).

9. Define the functions of the infinitives used in the following sentences:

1. James influenced another scientist, Walter Cannon, **to begin** research under laboratory conditions in order **to find out** the nature of psychological changes that accompany emotion.

2. Man differs from all other animals in his ability **to learn to solve** complex problems.

3. As the body grows and the brain begins **to develop** the infant learns **to focus** his eyes.

4. Human beings live in a complex and changing environment, so that it is impossible for them **to be** adequately **adapted** to it at birth.

5. On the other hand, when the mother is calm and affectionate, and the child can maintain close contact with her, fear is less likely **to arise**.

6. Food preferences seem **to be established** largely by learning and imitation from parents and later from other children.

7. In the early months infants appear **to experience** little beyond delight and distress.

8. They appeared **to refuse** help in order **to show** themselves that they are not dependent upon others.

9. The shock causes the animal **to make** the unconditioned response.

10. When the conditioned response is established, the salivary response will not occur until just before the time for the food **to be presented**.

11. Such studies have little significance for methodology in the narrow sense, but have much **to contribute** to a wider understanding of method.

12. Here we wish **to show** the complexity of the problem.

13. All the factors which are known **to influence** the learning process can be classified in three general groups.

14. The time limit of tests is another important thing **to consider**.

15. The results were difficult **to interpret**.

16. The experimenter must first describe the perceptions **to be studied**.

17. The learning organism must **be given** some reason for going **to work** on the problem **to be mastered**.

18. The function of scientific theories is **to explain** established empirical laws and **to predict** new laws.

19. Several years ago it seemed that there was nothing new **to be said** about the problem of perception.

20. The aim of the research was **to study** the relationship of controlled and uncontrolled responses of the observer to a very weak light signal.

21. From the point of view of systematic psychology, the first question **to be answered** concerns the place of personality study in the field of psychology.

22. The two branches of knowledge were **to be** separate.

23. **To stand** still requires a complex set of conditions.

24. The subject can hardly be expected **to start** investigating a problem without some idea about the task.

25. The psychology of visual perception is expected **to be concerned with** discussing immediate perceptual experience.

26. Human learning is full of instances where unnecessarily complex methods are used just because they were found **to work**.

10. Define the functions of ***that-those*** in the following sentences:

1. A second general problem is **that** of objectivity of judgements.

2. Ruger did not limit his data to **those** received only from animals.

3. Psychophysics is **that** branch of science which is concerned with subjective measurement.

4. The objectives of neuropsychology, like **those** of psychology are a better understanding of behavioural processes.

5. Quantitative variables are **those** recorded in numerical form.

6. **Those** early laws lay the foundation for further development.

7. How does the ability in any mental test vary with increasing age of **those** tested?

8. Children have interests which are naturally different from **those** of their parents.

9. All **that** pointed to the great lability of conditioned reflex activity.

10. There is evidence **that** emotional factors can affect perception.

11. Man's specialization is the capacity to profit from experience and **that** capacity most clearly distinguishes human perception from **that** of animals.

11. Translate the sentences paying attention to ***both…..and…..***

1. The adolescent acquires the capacity to use **both** deduction **and** induction at the same time.

2. One conditioned response which has been widely studied in the laboratory, **both** with human **and** animal subjects, is the lifting and withdrawal of finger, hand, or foot.

3. Our experiment had **both** maximum artificiality **and** maximum control.

4. Visual experiments are **both** qualitative **and** quantitative.

12. Answer the following questions based on the text:

1. What is operant conditioning?
2. Who was the first to describe operant conditioning?
3. What kind of behavior did Skinner examine?
4. What did Skinner construct to study spontaneous behavior?
5. Who did the hungry animal placed into the box behave?
6. How did the animal depress the lever for the first time?
7. Why did the animal depress the lever again?
8. What was the scheme of learning in this case?
9. When does the reward or reinforcement come in case of operant conditioning?
10. What is operant conditioning based on?
11. What association is operant conditioning based on?
12. What can the buzzer in Skinner's experiment be paired with?
13. When may the buzzer alone become a reward?
14. How can complex chain of habits be developed?

13. Talk about the topics:

1. Operant conditioning
2. Comparison between classical conditioning and operant conditioning
3. The problem of "insight" in psychology

14. Read the following text about negative reinforcement and try to explain the difference between escape conditioning and avoidance conditioning.

Negative Reinforcement

In negative reinforcement, a painful or unpleasant stimulus is removed or is not applied at all if a certain kind of behavior occurs. The removal of unpleasant conse-

quences increases the frequency of a behavior. There are two types of negative reinforcement learning psychologists have studied in detail: escape conditioning and avoidance conditioning. In escape conditioning, the behavior a person engages in causes an unpleasant event to stop. Consider the case of a child who hates liver and is served it for dinner – a thoroughly repulsive experience. She whines (whine - хныкать) about the food and gags (gag – давиться) while eating it. At this point her mother removes the liver. The gagging and whining behaviour has been thus negatively reinforced, and the child is likely to gag and whine in the future when given an unpleasant meal. This kind of learning is called escape conditioning because the behavior has enabled the child to escape the liver meal.

In avoidance conditioning, the person's behavior has the effect of preventing an unpleasant situation from happening. In our example, if the girl's past whining and gagging behavior had stopped the mother from even serving the liver, we would identify the situation as avoidance conditioning; the child would have avoided the unpleasant consequences in advance.

15. Translate the following text from Russian into English.

Поведение животного всегда направлено на удовлетворение той или иной потребности. Потребность не только заставляет животное быть активным, но и определяет формы этой активности. Так, например, голод вызывает пищевую активность – выделение слюны, поиски пищи и т.п. Условный рефлекс может связать эту активность с новыми раздражителями (например, звонком) или же новыми действиями (например, нажимание на рычаг). Но структура поведения животного при этом остается той же. Звонок выделяется (is singled out) из потока внешних раздражителей как сигнал пищи. Нажим на рычаг производится именно как акт поведения, который ведет к появлению пищи. Иными словами, даже при самой сложной условно-рефлекторной деятельности животного потребности прямо определяют как его поведение, так и его ответные действия.

Lesson VI
COMPLEX LEARNING AND LANGUAGE

Active Vocabulary

1. **achieve**, *v* достигать, добиваться
achievement, *n* достижение, успех
2. **anxiety**, *n* тревожность, тревога, беспокойство
anxious, *adj* тревожный, беспокойный; беспокоящийся, тревожащийся, волнующийся
3. **attitude**, *n* установка, отношение
4. **constant**, *adj* постоянный, непрерывный
constant, *n мат*. постоянная величина, константа
constancy, *n* постоянство, неизменность
5. **convergent**, *adj* конвергентный, сходящийся; - thinking конвергентное мышление
convergence, *n* конвергенция
6. **cramming**, *n* зубрежка (перед экзаменом)
cram, *v* наспех зазубривать
7. **desire**, *n* (сильное) желание
desire, *v* желать, испытывать желание, хотеть
desirable, *adj* желательный
8. **distribute**, *v* распределять
distribution, *n* 1. распределение 2. *мат*. дистрибуция
distributive, *adj* распределительный
9. **divergent**, *adj* 1. расходящийся 2. *спец*. дивергентный; - thinking дивергентное мышление
divergence, divergency, *n* 1. расхождение, отклонение 2. *спец*. дивергенция
10. **effort**, *n* 1. усилие 2. попытка; to make an – сделать попытку, попытаться, постараться
11. **excite**, *v* 1. возбуждать, волновать 2. возбуждать, вызывать to – interest (curiosity, envy) вызывать интерес (любопытство, зависть)
excitement*, n* возбуждение, волнение
12. **external**, *adj* внешний
13. **feature**, n 1. особенность, характерная черта; признак, свойство 2. pl. черты лица
14. **internal**, *adj* внутренний
15. **latent**, *adj* скрытый, латентный; - learning латентное научение
latency, n латентность, скрытое состояние
16. **manifest**, *v* обнаруживать, проявлять; делать очевидным; to – a desire to do smth. проявлять желание делать что-то
manifest, *adj* очевидный, ясный, явный; a – truth (error) очевидная истина (ошибка)

manifestation, *n* проявление, обнаружение

17. **occasional**, *n* случайный

occasion, *n* 1. случай 2. возможность, благоприятный случай 3. событие 4. основание, причина, повод

18. **partial**, *adj* частичный

19. **similar**, *adj* похожий, подобный

similarity, *n* сходство, подобие

20. **skill**, *n* умение; опыт; мастерство; to acquire – овладевать мастерством

skillful, *adj* умелый, опытный; искусный

21. **transfer**, *n* перенос, перенесение; переключение

transfer, *v* переносить, перемещать; переставлять

transference, *n* 1. перенесение; перевод; – from one school to another перевод из одной школы в другую 2. *спец*. передача

Text

COMPLEX LEARNING AND LANGUAGE

The basic principle of learning is reinforcement. When the student or learner does something that leads to success he is much more likely to repeat it; when he fails, he is not likely to repeat it. The reinforcements do not necessarily have to occur every time the pupil responds. Occasional, or partial, reinforcement can be sometimes more effective than constant reinforcement. The reinforcement can be either reward or avoidance of punishment. It is preferable to learn under the incentive of rewards rather than the threat of punishments.

Some degree of motivation is also essential for efficient learning. Human beings can sometimes acquire knowledge without deliberate effort, but the results are limited. This type of learning, which occurs without intention or obvious cause, is called **latent learning**. One definition of it is: «any learning which is not immediately manifested in performance».

The only way we can be sure that learning has taken place is if it is manifested in performance. The performance is brought forth usually under the offer of some sort of reward which the individual is motivated to acquire. So, we may say that we learn better if we **want** or **need** to learn.

Many different kinds of conditions of motivation affect the way we learn. If we are trying to teach someone a lesson, his desire to learn will enhance his achievement; but too much motivation can lead to extreme anxiety and excitement which will actually interfere with the learning process. Moderate, not intense desire is needed. External rewards such as marks for classroom work in a school, will be effective only if they are what the student wants. Not only must the reward be desired, but the material to be learned must also have **meaning**.

Another important condition, especially in the development of skills, is distribution. Distribution of learning and practice allows the material or skill to be much better assimilated. Just as excessive motivation interferes with success, so does over-

concentrated practice. Study and learning for examination, for example, should be spread over entire term and not crammed into the few days before the test. This is not to say that cramming will be ineffective. The performance upon which the student is evaluated is the one he delivers on the examination day. If «cramming » helps him for that day, then he should do it. If, however, he wants to retain the material and make a more permanent gain in learning, then the learning should be acquired over a longer period.

Transfer of training is another very important concept; what has been learned in one situation can be used in other situations. A person who has learned to drive one model of car is normally able to drive another model. This enhanced learning experience is called **positive transfer**. Yet, at the same time, interference may also occur. This interference in effective performance, called **negative transfer**, is accentuated by the similarity in situation.

Complex learning is a process of many associations in knowledge, skills, and attitudes. We must also be able to generalize from these associations and apply them in new situations. This process is called convergent or deductive thinking.

We learn to think and solve problems by both convergent (deductive) and divergent (inductive) thinking.

The most important single feature of complex human learning is language. Languages are made up of signs and symbols, and these must be learned in the same way as other things are learned. Once they have been learned then they and the way the brain associates them directly influence our further learning.

(L.S. Skurnik, F. George. «Psychology for Everyman». Penguin Books, 1972, pp. 37–41.)

Exercises

1. Translate the following sentences and word combinations into Russian. (The exercise is to be done orally):

occasional reinforcement; occasional repetition; occasional presentation;

partial learning; partial remembering;

constant error; a constant number; constant reinforcement;

to make an **effort** to memorize a poem; to make an effort to achieve a goal; to make an effort to get a reward;

the **transfer** of meaning; the transfer from internal to external speech;

cause of one`s **anxiety**; he fell ill because of constant anxiety; anxiety influenced his performance;

to **excite** interest; to excite desire; he was excited before the experiment; a cause of **excitement**;

desire to enter the University; desire to be free and independent; desire to get a reward; desire to achieve a goal; what do you desire? I desired to be left alone;

external (internal) factors; external (internal) influence; external (internal) development;

to acquire new **skills**; practical skills; to form new skills;

to **distribute** equipment; to distribute food among animals; I can`t account for this distribution; to affect the **distribution** of water;

similar objects; similar living conditions; similar distribution; similar skills; similar habits; **similarity** of behavior; similarity of tastes;

children`s **attitude** to parents; one`s attitude to work; one`s attitude to society; I have a negative attitude to him; they have a similar attitude to work;

the characteristic **features** of a natural language; features of one`s temperament; features of one`s character;

manifestation of interest; manifestation of anxiety; manifestation of desire; to **manifest** awareness of the environment; to manifest some change in behavior.

2. Translate the following sentences from Russian into English using the active vocabulary:

1. Даже помочь от случая к случаю лучше, чем ничего.

2. Время от времени причиной такого поведения может быть беспокойство испытуемых.

3. Лабораторные условия могут быть иногда причиной искажения полученных данных.

4. В этом случае даже частичное достижение цели было большим успехом.

5. Изучение механизма памяти связано с вопросом о частичном и полном забывании.

6. Шум был причиной частичного искажения в восприятии.

7. Необходимо определить постоянную ошибку.

8. Родители оказывали ему постоянную помощь и поддержку.

9. Он хорошо учится без всяких усилий.

10. Чтобы сделать этот опыт, не потребуется много усилий.

11. Врачи, учителя, психологи прилагают массу усилий, чтобы повысить эффективность школьного преподавания.

12. Испытуемые животные проявляли большой интерес к окружающим предметам.

13. Его математические способности проявились в раннем возрасте.

14. Группа ученых изучала вопрос о проявлении возрастных различий. 15. В природе можно наблюдать много проявлений действия закона естественного отбора.

15. Велики достижения в области теории коммуникаций.

16. Чтобы достичь хороших результатов в учебе, надо потрудиться.

17. При втором предъявлении испытуемый показал лучшие результаты. 19. По-моему, у Вас нет причин для беспокойства.

22. Постоянное беспокойство быстро состарило ее.

23. Новая методика проведения измерений вызвала всеобщий интерес. 22. Больной находился в состоянии непонятного возбуждения.

24. Вскоре возбуждение сменилось апатией.

25. Жажда знаний заставила Ломоносова покинуть родную деревню и отправиться в Москву.

26. У меня нет желания испытать это ощущение еще раз.

27. Если испытываешь желание достичь определенной цели, исполнение лучше, чем когда такого желания нет.

28. При определении причин заболевания следует учитывать как внутренние, так и внешние факторы.

29. Психолога интересует влияние внешнего мира на внутренний мир человека, его мысли и чувства.

30. Для опыта было отобрано шесть предметов, сходных по цвету и форме.

31. Я не замечаю никакого сходства между ними.

32. Вторая серия экспериментов дала результаты, сходные с результатами первой серии.

33. В университете многие студенты овладевают мастерством чтения лекций.

34. У него хорошее знание теории, но нет практических навыков.

35. Новые методы помогают скорейшей выработке у учащихся умений и навыков.

36. Работа была слишком сложной, пришлось распределить ее между несколькими студентами.

37. Общественность Англии протестовала против раннего распределения детей по разным типам школ в соответствии с результатами специальных тестов.

38. Как Вы относитесь к этому вопросу?

39. Отношение детей к учебе зависит от многих факторов.

40. В возрасте 13 лет отношение мальчика к родителям, особенно отцу, очень изменилось.

41. У нее очень приятные черты лица.

42. Характерная его особенность – стремление к достижению поставленной цели.

43. Матери пришлось перевести сына в другую школу.

44. Почему Вы переносите свое отрицательное отношение с отца на сына?

45. Положительный перенос очень важен в процессе обучения.

3. Choose the right word from the box and insert into one of the following sentences:

similarity, effort, anxiety, feature, achievement, external, skills

1. The mother in a state of high … about her son`s illness took him into a hospital.

2. Some child psychologists perceived a … in the early behaviour of animals and the human infant.

3. A great deal of thought may be required in learning …, but in the end the behaviour patterns become largely automatic.

4. … were made to control the process.

5. Philosophic materialism interprets consciousness as a reflection of the … world.

6. There is a strong association between ageing and many kinds of intellectual … .

4. In the following sentences find the Absolute Participial Construction and translate the sentences into Russian.

1. Man being a very complex organism, many sciences are concerned with his investigation.

2. Experiments being performed under carefully controlled conditions, behaviour of experimental animals may not be characteristic of their behaviour outside the laboratory.

3. Scientists having been able to discover specialization of different nerve fibres, a great deal is to be learned about the nature of nerve «messages».

4. This was done for obtaining additional data, the operations not being shown here.

5. Werner`s results appear to demonstrate that even the black disk on a white ground can be made invisible, the whole black area being obliterated and the colour stimulation being nullified, if the contour is not given enough time to develop in perception.

6. Scientific measurement may either be direct, the response itself being measured, or indirect, the measurement being of the stimulus used to obtain a specific response.

7. A given individual may have many personalities, one of them being central and, perhaps, explaining the others.

8. Hoppe`s experiments were characterized by a certain degree of informality, the conclusions being based on the subjects` spontaneous remarks concerning their reactions to the various situations.

5. Compare the meaning of ***any*** and its derivates in statements and interrogative sentences:

1. Can **anything** be learned when there is no motivation at all?

2. **Anyone** who has tried to memorize a lengthy poem has been aware of the way in which items mastered momentarily can slip away.

3. Is there **any** way or discovering differences between laboratory and extralaboratory thinking?

4. In **any** theory of personality the dynamics of behaviour is a topic of major concern.

5. **Any** discussion of personality begins with some definition of the term.

6. Theory testing is an important element in the growth and development of **any** science.

6. Speak on the topic: Complex learning and Language.

7. Read the following text, retell it and say if, in your opinion, there are age limits to efficient learning of a primary language and a foreign language. Give examples from scientific literature if you can.

In 1967 a book called «Biological Foundations of Language» was published by the Harvard neuropsychologist Eric Lenneberg.

Chapter 4 of the book presented what has since been called the critical period hypothesis. It suggested that the brain is able to learn a primary language during a certain early period, and not later on, and it proposed physiological explanations of why this might be so. Lenneberg`s innovation lay in those explanations; the idea itself has been around for a while.

Nikolas Tinbergen who was an ethologist had discovered that he could train baby ducks to follow him around if he trained them at a certain period. That was ducks. In humans Piaget did his lifelong study about what ages children develop certain capacities. The theory is as old as Saint Augustine, who realized it in an intuitive way back in A.D. 600 when he said, «Give me a child until he is six, and I`ll give you a Catholic for life». Augustine was wrong. It takes till twelve. According to Lenneberg, the child`s ability to learn its mother tongue effectively ends at the onset of sexuality.

(After «Genie» by Russ Rymer. N.Y., 1993, pp. 84-85)

8. Translate the following text from Russian into English.

Животное может приспосабливаться к условиям жизни, вырабатывая систему условных рефлексов. Однако животное не способно передавать другим животным свой опыт, оно не способно усвоить опыт предшествующих поколений. Важнейшее отличие человека от всех других животных заключается в том, что его индивидуальный опыт неразрывно связан с общечеловеческим опытом. Это оказывается возможным благодаря существованию языка.

Язык – есть система словесных знаков. Язык выступает как средство передачи, существования и усвоения общественно-исторического опыта. Другая важнейшая функция языка состоит в том, что язык выступает как средство коммуникации. В процессе коммуникации мы получаем новые для нас знания об окружающей нас действительности.

Lesson VII
MEMORY AND THINKING

Active Vocabulary

1. **capacity**, *n* 1. способность 2. объем, емкость; storage – объем памяти
2. **connotive**, *adj* коннотативный; – meaning коннотативное значение
connotation, *n* дополнительный, побочный оттенок значения, коннотация
connote, *v* иметь дополнительное значение

3. **efficiency**, *n* 1. эффективность, действенность 2. продуктивность, производительность 3. умение

efficient, *adj* эффективный, действенный

4. **event**, *n* 1. событие 2. случай

5. **frequency**, *n* частота

frequent, *adj* частый

6. **generation**, *n* поколение

generate, *v* порождать

7. **image**, *n* образ

imagine, *v* воображать, представлять себе

imagination, *n* воображение

imagery, *n* представление, мысленные образы

imaginary, *adj* воображаемый, нереальный

8. **involve**, *v* 1. включать в себя, содержать 2. вовлекать, впутывать 3. to be involved (in) быть включенным, участвовать

involvement, *n* участие, вовлеченность

9. **item**, n вопрос, пункт; задание (теста)

10. **pattern,** *n* 1. паттерн, образ жизни 2. структура 3. тип, способ 4. рисунок, узор

11. **recall**, *v* вспоминать, припоминать, воспроизводить

recall, *n* воспроизведение, воспоминание

12. **recency**, *n* новизна

recent, *adj* недавний, новый

13. **remind**, *v* (smb. of smth.) напоминать (кому-л. очем-л.)

14. **represent**, *v* представлять, изображать

representation, *n* 1. предъявление; репрезентация 2. изображение, образ 3. представительство

15. **retention**, *n* 1. сохранение в памяти 2. *физиол*. задержание, задержка

retain, *v* 1. сохранять 2. помнить 3. удерживать

16. **retrieve** ,*v* воспроизводить, извлекать из памяти

retrieval, *n* воспроизведение

17. **scan**, *v* сканировать

18. **store**, *n* накапливать, хранить в памяти

storage, *n* 1. хранение (информации) 2. запоминающее устройство

19. **value**, *n* 1. ценность 2. значение; число, величина

value, *v* 1. ценить 2. оценивать, производить оценку

valuable, *adj* ценный, важный

Text

MEMORY AND THINKING

Human memory and learning are intimately related since the development of an association between a stimulus and response requires some sort of retention. Some

of our associations, such as conditioned reflexes, are not at the conscious, but at the spinal level of association, although possibly they are "remembered" there also. For most of the behavior which distinguishes humans from animals (that is thinking and communicating through language) memory is located in the centre of the nervous system or cortex of the brain. We can think of the memory as analogous to some sort of filing cabinet system. Information received through the senses is stored and utilized as needed, within the limits of storage capacity and the personal efficiency for "searching the files". (Without this retention process there could be no learned behavior). Our storage capacity seems to be an inflexible individual characteristic, but the efficiency with which the information is retrieved is a function of a number of influences. Three of these influences, which are general features in memory, are frequency, recency, and value.

Frequency refers, everything else being equal, to the tendency to remember those experiences which have happened most often. Experiences or events that occur infrequently are not remembered well. It is also clear that, everything else being equal, we remember the more recent events in contrast to those that occurred in the earlier times.

Learning also influences our ability to recall our past experiences. When the learning takes place, how well is the material mastered? How frequently do the lessons occur, and what are the personal priorities we attach to the lessons? All these factors affect the extent to which we can demonstrate our retention of information.

Thinking must, like memory, be inferred from public behavior. Thinking is another so-called "mental" activity, involving the manipulation of symbols, signs, concepts, or ideas, which are symbolically represented. Thinking is a process which is closely bound up with language.

To continue with a filing analogy, thinking is the term used to describe the various ways in which the information in storage is retrieved, scanned, examined, combined, and rearranged. We do not actually examine the objects (memories) on "file", but we may sometimes refer to the verbal description of the remembered events. Memory, learning, thinking, and language are all intimately related processes. So far is this the case that a word may remind you of other words and conjure up images, whereas a perception may conjure up images and also remind you of a linguistic description.

Two types of thinking, i.e. convergent and divergent thinking, are processes of association between stimuli and responses which are acceptable according to different criteria. We may also make associations among ideas or experiences. When we are faced with a problem that we wish to solve we usually resort to convergent thinking, depending on our memory to bring forth the best answer that can serve as a solution. If this effort is unrewarding we may resort to trial-and-error or perhaps use a hypothesis as a result of insights, i.e. we may be able to assemble our previous experiences in a new way so that we understand the relationships required to solve the task. Our thinking process like many of the actions we perform, is very likely to become habitual and standardized. Most people find it very difficult to change their pattern of thinking, especially if their methods have previously been rewarding.

Through language we understand and communicate the symbols and concepts that we learn. The words in our language are learned initially by association with the objects or events they represent (extension), but we also acquire meaning of words through their relationship to other words and symbols. They are usually clear-cut labels and have only one meaning. The second class of symbols are connotive symbols, and they mark the way we intend to make people think about these things. Words like "good", "happy", "worthwhile", are some of the connotive-type words used valuatively.

The essential link between thinking and language, we must repeat, comes about because we learn a great deal by **description**. We read about the experiences of others, of their verbal representations of other objects and ideas. We think by internal manipulations of language, and the very fact that we are able to associate a name successfully with an object is clear evidence that our memory stores both the name and a symbolic representation of the thing.

Let us look at just one piece of experiment on linguistic behavior. Our vocabulary is composed of tens of thousands of words, including a great number of adjectives. We can use adjectives to qualify objects with such words as "good", "clean", "large" and so on. Research has shown that our basic connotive vocabulary can be reduced to the three broad types of adjectives that most people use to describe their environment. The fundamental adjective types are:

Evaluation: i.e. good … bad

Potency: i.e. strong … weak

Activity: i.e. active … passive

These three pairs of adjectives are the basic meanings that we seem to apply to many of the objects we perceive, learn, and think about. The whole field of relationship of symbols and language is the communication process by which human knowledge is recorded and developed. Language makes it possible for each generation to learn for itself what other generations had learned earlier. Knowledge is cumulative, otherwise each generation would have to learn for itself, for example, all of the principles of science. Cognition is the mental process by which we learn, think, and remember, and we use language to describe and understand the world around us.

Exercises

1. Name adjectives from which the following nouns are formed:

awareness, newness, greenness, quickness, sleepiness, bigness, blindness, blackness, usefulness, seriousness, unexpectedness, darkness, nervousness, correctness

2. Translate the following sentences and word combinations into Russian. (The exercise is to be done orally):

to retain information; to retain knowledge; to retain the exciting news; the mechanism of **retention**;

to store facts; to store data; the brain is the place where a great deal of information is stored; **storage** capacity;

to have good intellectual **capacities**; our memory has a great storage capacity;

efficiency in performance; efficiency in memorizing facts and figures;

recent events; a recent trial; a recent experiment;

to **value** one`s views; to value one`s opinion; **valuable** facts; valuable data; valuable information; information **value**;

historical **events**; recent events; to remember better frequent and recent events;

to **involve** new data; to involve one`s consciousness, to involve one`s memory; to involve thinking;

the **image** of the world around us; the image of a concept; image memory; a visual image;

to study the **pattern** of one`s behaviour; to influence one`s pattern of thinking; to depend on the pattern of memorizing new data; the pattern of movement;

the younger **generation**; the older generation; several generations of experimental animals.

3. Translate the following sentences from Russian into English using the active vocabulary:

1. Мы удерживаем в памяти только часть получаемой информации.
2. Сохранение в памяти многочисленной информации – чрезвычайно сложный процесс.
3. В его памяти хранится самая разнообразная информация.
4. В памяти хранятся наиболее важные сведения.
5. У разных людей различный объем памяти.
6. Как правило, у детей хорошая восприимчивость к учению.
7. Он – человек больших способностей.
8. Новые эффективные методы обучения нашли широкое применение в нашей школе.
9. Много квалифицированных преподавателей работает в нашем университете.
10. Лечение оказалось эффективным.
11. Следует проверить эффективность этого метода.
12. Это происходит чрезвычайно часто.
13. Частотность употребления этого слова в речи очень высокая.
14. Интерес к исследованиям в области массовой коммуникации – сравнительно недавний.
15. С большим удовольствием вспоминаю я недавнюю встречу со старыми друзьями.
16. Новизна – одна из особенностей памяти.
17. Хотя знания студента были недостаточными, преподаватель оценил усилия студента самостоятельно разобраться в изучаемом материале.

18. Без сомнения, ваш ценный опыт окажет нам большую помощь в решении этого вопроса.

19. Огромна ценность экспериментального метода для психолога.

20. В его жизни, казалось, не было никаких примечательных событий.

21. XVIII Международный психологический конгресс в Москве был событием огромного значения.

22. Два события оказали решающее влияние на всю его жизнь.

23. Данная проблема включает несколько отдельных вопросов, которые следует рассматривать отдельно один за другим.

24. Многие внутренние органы вовлечены в этот процесс.

25. Психологи, биологи, физиологи, химики заняты изучением процесса старения.

26. Ощущение – суть субъективный образ объективного мира.

27. Образная память бывает зрительной, осязательной и т.п.

28. Изучение модели поведения обезьяны дало интересные результаты.

29. Сейчас много говорят о необходимости разработать модель будущего специалиста.

30. Между поколениями существует тесная связь.

31. Новое поколение много наследует от старого.

32. Опыт проводился на нескольких поколениях мышей.

4. Choose the right word from the box and insert into one of the following sentences:

to retain, to involve, pattern, frequency, conscious, consciousness, capacity

1. The elementary form of … amongst animals is sensory …

2. Learning a skill may … many errors.

3. For most people maximum intellectual … in the biological sense is somewhere between the ages of 15 and 25.

4. This behavior is in the main takes the form of the specific … of activity in response to specific stimulation termed reflexes.

5. At the opposite pole is behavior in which individual is clearly … of a definite end or goal towards the attainment of which his actions are directed.

6. He … these responses unchanged throughout life.

7. Attempts to make contact with other children increase in … with age, although contacts are usually short-lived until three years and upwards.

5. In the following sentences find the Gerund, define its forms and functions, translate the sentences into Russian:

1. Psychologists measure intelligence by observing a person`s performance in a set of standard tests.

2. Measurements of perceptual and motor skills, or even personality, attitudes and motivation might give useful data for predicting age-changes.

3. We are all familiar with the experience of being urged or driven to behave in certain ways to achieve certain ends.

4. During the past 25 years psychologists have taken more seriously the possibility of constructing mathematical models for the description of mental phenomena.

5. Easier tasks, if they are of the right sort, stand a greater chance of being solved by insight.

6. The subject was first tested by being handed pencil and paper and told to make a written reproduction of what he had learned.

7. Changing the food used as a stimulus will produce divergent results in the same animals.

8. We cannot understand the nature of measurements without knowing about the properties of mathematics.

9. Without being conditioned human beings soon learn that the dinner bell is a signal for dinner and will respond to it by going to the dining room.

10. Being punished can be preferable to being ignored.

11. The fact does not prevent our using this experimental technique.

6. Translate the following sentences paying special attention to the italicized expressions:

1. *The higher* the level of scale, *the more* we can do with the numbers we obtain in measurement.

2. *The greater* the proportion of similar reactions, *the nearer* they are on the scale, and *the smaller* the proportion of similar reactions, *the farther* apart they are.

3. *The greater* the age difference between the child subject and the experimenter, *the more difficult* is for the experimenter to understand the child`s feelings.

4. *The less* complex the subjects, *the easier* it is to carry out a scientifically valid experiment.

7. Answer the following questions based on the text:

1. What is human memory closely connected with?

2. What is human memory based on?

3. Where is memory located?

4. What is the quantity of information stored in our memory limited by?

5. Is storage capacity the same for every individual?

6. What are general features in memory?

7. What is meant by the term «frequency»?

8. What do we remember better, the more recent events or the events that occurred earlier?

9. What does the term «value» refer to?

10. What is thinking?

11. What is thinking closely bound up with?

12. How do we understand and communicate the symbols and concepts that we learn?

13. Why is language so important for human being?

8. Prepare a dialogue between two students, one of whom majors in psychology, while the other majors in history. The following may serve you as a guideline for your dialogue:

– Since you major in psychology, I hope you`ll be able to help me. The thing is, I must remember numerous facts and figures and I find it too difficult. I`m afraid there is something wrong with my memory. Besides, the trouble is that though I can memorize learning material fairly quickly, I forget it as quickly. Why so?

– …

– I see. So there is long-term and short-term memory. What should be done to retain the material studied and make a more permanent gain in learning?

– …

– How much material can be remembered and stored in our memory? Are there any limits to our storage capacity?

– …

– I`ve noticed that I remember material better if I feel emotionally interested in it.

– …

– I see. But I still don`t understand why some people remember things better than others. Can I improve my memory?

– …

– Thanks a lot for interesting information. You must be a very good student.

9. Read the following text about Herman Ebbinghaus and be ready to speak about his contribution to psychology:

Ebbinghaus (1850–1909), a contemporary and countryman of Weber and Fechner, began the scientific study of memory processes. Prior to Ebbinghaus` work, many philosophers and psychologists had said that such a complicated mental process as memory could never be studied empirically. As a mental event, memory could not be brought into the laboratory for study. Fortunately, Ebbinghaus did not pay much attention to these earlier attitudes. He decided to learn how he himself learned and how he retained what he learned, and in line with this aim he developed the **memory drum** and the **nonsense syllable** (qux, kun, mes). The memory drum is a device that presents nonsense syllables to a subject one at a time. Ebbinghaus made up a list of nonsense syllables and presented them to himself in a memory drum. He counted the number of times that he had to see and pronounce the syllables in order to learn them. Then he left the task for varying periods of time and later relearned the syllables. Naturally he found it easier to learn the list the second time, and he used the percentage «saved» (the second time over the first as his retention measure).

Ebbinghaus believed, as did Weber and Fechner, that he was getting at the relationship between physical events and mental events. But again we can see that Ebbinghaus` mental event was purely behaviour. It was the number of nonsense syllables that he could recite after a period of time.

Ebbinghaus` technique and procedures remain important in learning today, and he is historically important because he went into the laboratory to study a phenomenon that had hitherto been considered mental.

10. Speak on the following topics:

1. Memory and its general features.
2. Experiments on memory you know of.
3. Thinking, types of thinking.
4. Language and thinking, language as a means of communication.

11. Translate the following text:

Запоминание, сохранение и воспроизведение индивидуумом его опыта называется памятью.

В памяти различают такие основные процессы: запоминание, сохранение, воспроизведение и забывание. Эти процессы формируются в деятельности и определяются ею.

Изучение механизмов памяти – одна из важных проблем в психологии.

Память включена во все многообразие жизни и деятельности человека. Она имеет много форм. Деление памяти на виды обусловлено прежде всего особенностями самой деятельности, в которой осуществляются процессы запоминания и воспроизведения. При этом отдельные виды памяти выделяются в соответствии с тремя основными критериями:

– по характеру психической активности память делят на двигательную, эмоциональную, образную и словесно-логическую;

– по характеру целей деятельности – произвольную и непроизвольную;

– по продолжительности закрепления и сохранения материала – на кратковременную, долговременную и оперативную.

Lesson VIII
GROWTH AND DEVELOPMENT

Active Vocabulary

1. **adolescent**, *n* подросток; юноша, девушка
adolescent, *adj* подростковый
adolescence, *n* подростковый возраст; юность
2. **adult**, *n, adj* взрослый, совершеннолетний
adulthood, *n* взрослость, совершеннолетие
3. **age**, *n* 1. возраст 2. период; эпоха
age, *v* взрослеть, стариться
ageing, *n* старение
4. **community**, *n* 1. сообщество, коллектив, группа 2. общность (людей)
5. **concern**, *n* 1. отношение, касательство 2. беспокойство, забота 3. участие, интерес
concern, *v* 1. касаться, иметь отношение 2. интересоваться, изучать to be concerned (with)
concerning, *prep* относительно, касательно
6. **height**, *n* рост
7. **heredity, inheritance**, *n* наследственность
hereditary, heritable, *adj* наследственный
heritage, *n* наследие
inherit, *v* наследовать
inherited, *adj* врожденный, унаследованный
8. **infant**, *n* младенец, ребенок
infancy, *n* младенчество, младенческий возраст
9. **maturity**, *n* зрелость
maturation, *n* созревание, возмужание, рост, развитие
mature, *adj* зрелый
maturate, mature, *v* развиваться, созревать (о людях)
10. **rate**, *n* скорость, темп; интенсивность
11. **self-preservation**, *n* самосохранение
12. **self-protection**, *n* самозащита
13. **a series**, (pl. – unchanged) *n* 1. серия 2. ряд
14. **species**, (pl. – unchanged) *n* 1. *биол.* вид 2. род, разновидность, порода
15. **teenager**, *n* тинэйджер, подросток
16. **tolerance**, *n* толерантность, терпимость, выносливость
tolerant, *adj* толерантный, терпимый, выносливый, устойчивый
17. **trait**, *n* 1. характерная черта (особенность, свойство) (человека) 2. признак
18. **transition**, *n* 1. переходный период 2. переход (превращение) из одного состояния в другое
transitional, *adj* переходный, промежуточный, неустойчивый

19. **weight**, *n* вес
weight, *v* 1. взвешивать 2. весить 3. иметь вес (значение); влиять
20. **youngster,** *n* мальчик, юноша
youth, *n* 1. юноша 2. юношество

Text

GROWTH AND DEVELOPMENT

The process of growth and development is something that is taken for granted, since it happens to us all and seems to be a normal, natural series with little variation.

The two main influences which affect our development are inherited potential and environmental experience. Our inborn characteristics determine our constitution as members of human species: they determine skin colour, eye colour, bone structure and internal make-up. These inborn traits govern in a real sense the rate of growth and the limits of biological and physical development.

Some extremists have contended that heredity is the more important determinant of behavior, implying the mechanistic view of human nature. Others have taken the opposite viewpoint that "all men are created equal" and the effects of environmental pressures and opportunities cause the main distinction between one man and another. Environment, through learning and experience, certainly nurtures inherited potential so that normal, healthy growth progresses to maturity. The kind of adults we become, however, is the result of the **cumulative** and **combined** effects of these two influences.

To discover the ages and stages of growth, many children have carefully been studied and their behaviour recorded. The early years are essentially concerned with movement and physical development. Mental development also occurs, and this will be discussed later.

From the moment of birth, the child appears as a feeding, crying, sleeping, body-waste producer, not very different from any other infant creatures. None of the human characteristics such as speech, thought, sociability and so on, are apparent. Within a few weeks the child`s muscles mature enough for him to be able to focus his eyes on things and people around him, and show an awareness of his environment. The reflex patterns of behaviour that are inborn include sucking, breathing, and the other body functions. The infant is so helpless that he cannot even perform such basic survival responses as escape from pain-causing stimuli, or obtaining food and drink, without adult assistance. By six months he can sit up, and at the end of the first year he is usually able to stand and crawl around. Within two or three months more he is on his feet and walking without assistance. Speech development takes place in a somewhat similar manner. In the early months the only sounds are crying or babbling noises. After six months distinct learning speech sounds can be made, such as "mamma" and "dadada". By the first year these have become "Mama' and "Daddy", and are associated with particular people. Although the spoken vocabulary is quite limited at this age, quite a few commands and demands can be clearly understood by

the child, such as " sit still" or "open wide" or "don`t touch that". By about fifteen months the child is able to issue one-word demands or comments such as "out" or "doll". Soon the words are connected in crude but meaningful combinations of two or three words: "we want sweet" and "we play toys". The child is now becoming a human being, to be influenced by the experiences which make people social.

The first year of human life are characterized by development language, motor ability, and socialization. The child, however, is quite self-centered in his view of life and generally does not know how to cooperate with other children in play and other activities. Children at this age may play in the same location but there is no genuine understanding one for the other. School experiences, however, open up a whole new world for the child. He learns to become partly independent of his mother and home. He learns new facts of life. He learns how to behave in society.

As the child matures he develops more complex powers of reasoning. The child rapidly acquires many intellectual skills, including the ability to use symbols such as letters and numbers. The acquisition of knowledge is also integrated with the development of other skills, such as the ability to play certain games, the use of artistic materials, tools, etc., and the formation of attitudes. The schools are also charged with the task of moulding the children into useful members of their community and society.

During adolescence the child undergoes changes in his psychological make-up as important and significant as those in the first years of life. During this period between the dependency of childhood and freedom of adulthood, the physical, social, and emotional changes that occur sometimes cause dramatic open conflict between the adolescent, his parents, and society. This, of course, is not true of all teenagers, and many youngsters ripen into adulthood with little or no difficulty.

As the adolescent becomes older and stronger and gains more freedom he may abuse his independence or he may become shy and withdrawn. Many adjustments have to be made, many skills learned, and new styles of behaviour have to become a part of the normal life of the individual. Height and weight increase very rapidly, the sex organs mature, and the child now is biologically able to be parent. Generally, girls enter adolescence two years earlier than boys, and between the ages of 11 and 15 many girls are taller than the boys. Age 11 is the typical beginning of the adolescent stage for girls and age 13 for boys. During adolescence the **rate** of growth is faster than at any other stage since early infancy.

Adolescence is often described as "the awkward age", but in fact there is generally no loss in physical skill and coordination. Tests of physical skills, muscular coordination, and athletic ability show a steady increase in ability during the transitional years.

If a single word were needed to characterize adolescence it would be "freedom". They want to be treated like adults and also wish the parents to have tolerance for their efforts to be individualistic, regardless of the consequences. The transition is made most smoothly if the change is anticipated and provisions are made through which the child naturally assumes more and more independence.

To help themselves over the uncertainties and the feelings of unsecurity that permeate this stage of life, teenagers have found that grouping together is an aid to self-protection and psychological self-preservation. There is strength and sympathy and comradeship among members with the same problems.

(L.S. Skurnik, F. George. «Psychology for Everyman». Penguin Books, 1972, pp. 50–56.)

Exercises

1. Form adjectives from the following verbs by means of the suffix ***–able***. Translate the adjectives into Russian.

to adjust, to drink, to digest, to depend, to excite, to move, to laugh, to notice

2. Translate the following sentences and word combinations from English into Russian. (The exercise is to be done orally):

rate of growth; rate of development; rate of ageing; at the rate of 7 presentations per ten minutes;

heredity is one of the factors that determine our growth and development; to pay attention to heredity; to investigate the problem of heredity;

progressive **maturation** of structures; maturation of the nervous system; the individual reaches biological **maturity** between the age of 15 and 25; as a science **matures** its theories become more complex;

sometimes **adults** can`t understand children; five adults were chosen for the tests; difficult **adulthood**;

he **aged** very quickly; what`s his age?; at the age of seven he went to school; **ageing** is a very unpleasant period of life for many people;

I am not **concerned with** the problem; the investigator was concerned with the behaviour of his subjects; concerning the problem of heredity our views differ; many interesting results have been received **concerning** the stage of ageing; we shall be concerned with the more traditional view of psychophysics;

grown-ups and **adolescents**; the rate of growth during **adolescence**; adolescence is a very important stage of development; adolescents often have conflicts with their parents;

a group of **teenagers**; the problem of teenagers; sometimes teenagers cause much trouble to their to their parents and teachers;

a **youth** movement; a youth organization; youngsters tend to group together; a youngster stopped me in the street;

to measure one`s **height** and **weight**; to grow in height and weight; they are of the same height;

infancy period; he was a healthy **infant**; the infant fell asleep at once.

3. Translate the following sentences from Russian into English using the active vocabulary:

1. За последнее время наблюдается акселерация темпов роста и развития у детей.

2. Умственные способности изменяются с возрастом с одинаковой скоростью у мужчин и женщин.

3. Новый научно-исследовательский институт был организован в Киеве для изучения проблем, связанных с наследственностью.

4. Безусловные рефлексы – часть наследственности животного.

5. По мере того, как ребенок растет, его ум взрослеет.

6. Девушки созревают раньше, чем юноши.

7. Процесс созревания всегда сопровождают большие изменения в психике.

8. Изменения в зрелом возрасте менее заметны, чем в детстве.

9. Интересно заняться изучением влияния процесса старения на умственные способности человека.

10. Научное изучение процесса старения – довольно новое направление в исследованиях.

11. В этой книге рассматриваются некоторые аспекты жизни взрослых людей.

12. Психолога интересует поведение человека и животных.

13. Меня не интересует эта проблема.

14. Сейчас известно многое относительно процесса старения.

15. Многие более ранние работы касались вопроса восприятия цвета.

16. Подросток способен анализировать собственные мысли.

17. Несколько подростков были отобраны для эксперимента.

18. Существует много проблем, связанных с воспитанием подростков.

19. Для подростков характерно стремление к независимости и свободе.

20. Юность – лучший период в жизни человека.

21. В юности он прожил много лет на Дальнем Востоке.

22. Все испытуемые были среднего роста и нормального веса.

23. До начала опытов всех животных осмотрели, а также измерили их рост и вес.

24. В юности происходит переход от конкретного к формальному мышлению.

25. Для него характерны неожиданные переходы от радостного настроения к депрессии.

4. Choose the right word from the box and insert into one of the following sentences:

maturity, to be concerned, adjustment, rate, age, adult, to adjust

1. Recent writers have emphasized the importance of interest in attempts to understand and … to the environment.

2. A harmony with the world around us is social …

3. Loss of hearing during … years is usually gradual.

4. Throughout … and old age many changes take place which change the adjustment.

5. One can say that intelligence is very important for personal adjustment at any…

6. Ageing affects the … of intellectual achievements.

7. The study of adult intelligence … with intellectual abilities and intellectual performance from the age of biological maturity, 15 to 25 up to the end of human life.

5. Find Conditional clauses, underline conjunctions in the clauses and translate the sentences into Russian:

1. If you ask someone why they are doing what they are they will usually answer in terms of a purpose or goal.

2. The immense ability of the eye to accommodate itself to environmental conditions is indicated by the fact that one`s eye can perceive without damage a light that contains hundreds of millions of times more energy than the «threshold light», provided that the eye is in a suitable state of adaptation.

3. We can have two or more common factors per test, provided all are also related to the job criterion.

4. Practically any non-language task can be adapted to the scientific study or motor learning, provided that the performance of the subject from trial to trial can be accurately measured and recorded in some quantitative way.

5. None of these problems could be investigated, nor any of the questions correctly answered, unless investigator had at his disposal adequate apparatus, a sufficient number of the right sort of objects, and a complete experimental design already worked out before he attempted to begin.

6. In studying an animal the laws of learning will not allow you to predict its behaviour unless you know also conditions, such as what relevant stimuli are and which responses will be rewarded and which punished.

7. Once we have learned a skill we do not forget it provided we have practice in using it.

8. If there is improved performance, then clearly learning is taking place.

9. Infants may be unaffected by alarming events, unless the mother displays fear.

6. Answer the following questions based on the text:

1. What are the two main influences that affect our development?

2. What does heredity determine?

3. What views do scientists have concerning heredity?

4. What are the early years of children concerned with?

5. Does the human infant differ greatly from other infant creatures during the very first weeks after birth?

6. What human characteristics are not seen in human infants at the very first stage of their development?

7. What facts can prove that within a few weeks after birth an infant is absolutely helpless?

8. What can a child do by 6 months?

9. When does the child begin to crawl and walk?

10. In what way is speech developed?

11. What changes occur during adolescence?

12. What is the cause of conflict between the adolescent, his parents and society?

13. Who enters adolescence earlier, boys or girls?

14. At what age do boys (girls) enter adolescence?

15. Why is adolescence often described as "awkward age"?

16. Why do teenagers tend to group together?

7. Translate the following text in written form. Look up unfamiliar words in a dictionary:

The Trying Twenties

The trying twenties confront us with the question of how to live in the adult world. Our focus shifts from the interior turmoils of late adolescence – «Who am I?», «What is truth?» – and we become almost totally preoccupied with working out the externals. «How can I realize my dreams?», «What is the best way to start?», «Where do I go?», «Who can help me?», «How did **you** do this?»

In this period which is longer and more stable compared with the period that leads to it, the tasks are enormous: To shape a Dream, that vision of ourselves which will generate energy, aliveness, and hope. To prepare for lifework. To find a mentor if possible. And to form capacity for intimacy, without losing in the process whatever the consistency of self we have thus far mastered.

Doing what we «should» is the most important theme of the twenties. The «shoulds» are largely defined by family models, the press of culture, or the views of our peers. If the prevailing cultural instructions are that one should get married and settle down behind one`s own door, a nuclear family is born. If instead the peers insist that one should act independently, the 25-year-old is likely to have no commitments.

One of the terrifying aspects of the twenties is the inner belief that the choices we make are irrevocable. It is largely a false fear. Change is quite possible, and some alternations of our original choices must probably be made.

Two impulses, as always, are at work. One is to build a firm, safe structure for the future by making strong commitments, «to be set». Yet people who accept a ready-made form without much self-examination are likely to find themselves **locked-in**. The other urge is to explore and experiment, keeping any structure tentative and therefore easily changeable. In the extreme cases, these are people who constantly change jobs and acquaintances, spending their twenties in the **transient** state.

Although the choices of our twenties are not irrevocable, they do set in motion a Life Pattern. Some of us follow the locked-in pattern, others the transient pattern, the wunderkind pattern, the caregiver pattern, and there are a number of others. Such patterns strongly influence the particular questions raised for each person during each period.

Having powerful illusions and belief in the power of will, we commonly insist in our twenties that what we have chosen to do is the one true course in life. Our backs go up at any remark that we are like our parents, that two decades of parental training might be reflected in our current actions and attitudes.

«Not me», is the motto, I`m different.

(After Gail Sheehy. «Passages». N.Y., 1974, pp. 200–203.)

8. Choose one of the problem-questions given below and speak on it (make use of the text in ex. 5):

1. What life pattern would you like to follow? What is this pattern characterized by?
2. Why do you prefer it to any other?
3. Would you like to follow the Life Pattern of your parent(s)? Why?
4. In what way are you different from your parents?

SUPPLEMENTARY READING

Read after Lesson I.

The General Plan of Scientific Method

The scientist selects a tentative explanation as the beginning step in his enquiry, and this tentative suggestion is taken as a hypothesis, which directs the search for corroborative or negating facts. The hypothesis is merely a question. Each hypothesis is recognized as a question belonging to a larger family of questions.

An investigation is designed in a such a way that it involves a direct analysis of all the major conditions of the hypothesis.

Preferably the investigation takes the form of an experiment, which is carried out under carefully controlled conditions during the systematic variation of one of these conditions in particular. These characteristics allow reproducibility of the conditions under a given experiment is performed. When experimentation is impossible, however, the investigator may employ other methods. Psychological science is founded upon, but not limited by, the experimental method.

If the results of the investigation are not controversial, the hypothesis may be confirmed (although not proved) and the next step involves tying together the results of a large number of scientifically tested propositions which have some system of relationship. The results of this last step may involve the formulation of a scientific law, which is merely a resume of a longer and more detailed description.

Another stage, although not an absolutely necessary one, is the organization of a theory to account for the laws. The laws, as well as the theories, represent generalizations from which formal deductions can be made. These deductions are then set up as hypotheses for further scientific investigation. A particular law or theory is thus tested objectively to whether or not the things which it predicts (which may be deduced from it) are supposed or discredited empirically. As more and more correct predictions are added for a particular theory or law, we say that truth is approached (not attained by the theory or law).

The process of induction from empirical evidence always involves a treacherous step because the evidence is never complete. In testing a certain hypothesis about human behavior, we can never study all humans but must obtain what is believed to be a "representative" sample from the hypothetical population of all humans. Generalizations are thus of necessity made on the evidence of partial evidence, and so they are made only as probable inferences. The degree of probability – or confidence – that can be attached to the scientific inferences differs from one another, and to this extent the business of science is directed toward diminishing error in the general process of scientific problem solving.

Theory and experiment are the helpmates of scientific pursuit, theory suggesting the pattern of the maze, and experiment determining the blind alleys and the short cuts. Whenever such a maze is found to be composed only of blind alleys, it is modified or discarded. To this extent the term science should be reserved to describe a

body of verified knowledge, and the most satisfactory criterion of science is in terms of the method of verification. Knowledge of facts without knowledge of procedures to discover the facts does not constitute science, and this is especially true in psychology. Knowing about the behavior of people does not qualify one as a psychologist.

Read after Lesson II.

A Reflex ARC

Much of human behavior is highly complex, difficult to predict or even to explain after it has taken place, but some elements in our behavior are surprisingly stable and it is these which we shall now consider. As an example let us take the simple withdrawal reflex. Take a spoon from a hot cup of tea and place it unexpectedly on somebody's hand. The response takes place before the victim has time to think of what is happening to him and is quite involuntary. Responses such as these are dependent upon pre-formed neurological connections and many of them function independently of the brain. If the spinal cord of the dog is cut just below the brain so that no nerve impulses can reach the brain it will still make a withdrawal response if its paw is pinched.

The net of neurological connections responsible for a simple response of this kind is known as a reflex arc. It is usual to think of a reflex arc as consisting of three nerve units or neurons: a sensory neuron which brings in a nerve impulse (e.g. from the skin), a connecting neuron in the spinal cord, and a motor neuron which conducts the nerve impulse out to a muscle (i.e. 'reflects" the impulse). This, however, is an over-simplification, because the more complex reflexes are concerned. Before going further into this let us pause for a moment to consider what a neuron is and how the nerve conducts impulses.

A nerve consists of a single nerve cell and may take many forms, but all consist of a central cell body which lengthens out into a long fibre (as much as several feet in some cases) and ends in fine network known as dendrites or dendrons. A nerve consists of a bundle of such neurons enclosed within a protective sheath except when they enter within the brain. The axon of one neuron branches within the dendrons of others so that it may pass on its impulses to any one of perhaps hundreds of other neurons with whose dendrons it has contact.

The point of contact between an axon and a dendron is known as a synapse and it is the relative amount of resistance at the various synapses which determines the route of the nerve impulse. Conduction through the synapse is relatively slow and may require as much time as the traversing of the complete neuron. Hence responses which are mediated through several synapses may be considerably delayed. The simple reflex is thus a very rapid response. In fact some of the reflex responses are just about ten times as fast as the quickest voluntary action, e.g. pressing a telegraph key on a given signal.

Read after Lesson III.

False Judgments Illusions

We see not what is happening but what we expect to be happening. We deceive ourselves. Experience and memory enable correct judgments experience and be formed. But experience and memory can also make us liable to false judgments. Take a piece of green paper and cut from it two shapes, one of a leaf and the other of a dog. Show them to a friend and ask him which is greener. His answer should hear out the fact that we are unfamiliar with green dogs.

False perceptions are called optical illusions.

Anxiety has a considerable influence on how we perceive people and objects.

Some experimenters have found that anxiety makes subjects take longer to react. Subjects are shown a series of words one after another on a tahistoscope (a device) for exposing visual material for very short period),are asked to say the first word that comes into their heads after each of the stimulus words. If the words shown to them are emotion-provoking words such as 'love', they are found to take longer to give answer than if the words are neutral words such as 'door'. The Galvanic Skin Response, G.S.R., is also found to be higher when we perceive emotional words on a tahistoscope.

Psychologists use the word 'threshold' to define the point at which something can be perceived. Anything that can be seen is said to be above the threshold for sight; what cannot be seen is said to be below the threshold. If, using a tahistoscope, we display an advertisement on a screen either so quickly or so dimly that is reported is a blur, it can be described as being shown 'subliminally', the word used to mean 'below the threshold'.

Some experimenters have concluded that emotional words shown subliminally have influenced the subject without his being aware of it. After the subliminal presentation the experimenter gave a signal for the subject to respond with a word. The response words have shown a greater connection with the subliminally presented stimulus words than would have been expected by chance. However, it is very difficult to prove this and the experiments on subliminal perception have been criticized on the grounds that the observer can perceive something, however vague, which reminds him of the actual stimulus word.

There is evidence that subjects who are asleep are able to discriminate and can be conditioned even though they are unaware of it. Some experimenters claim to have shown, that we can learn while asleep. Their experimenters have been criticized on the grounds that care has not always been taken to ensure that the subjects were not simply drowsy rather than fully asleep. Even if the claims are true more experimental work needs to be done in this field to determine whether the material learnt in this way is retained better than that learnt while we are awake.

What is clear from all perception experiments is that there are very great individual differences in the way people perceive both objects and other people. Our social and cultural backgrounds, our upbringing at home and school, or our own partic-

ular habits, activities and experiences all influence the way in which we perceive things. In the act of perception, however objective we try to be (i.e. to see what is actually there) we cannot be rid of subjective influences. We cannot assume that others perceive or judge as we do. There is increasingly more evidence as time goes on that we should never judge others as we judge ourselves.

Read after Lesson IV.

Conditioning salivary conditioning

Conditioning as a method for the study of learning was first employed extensively by the Russian physiologist I.P.Pavlov. The response which he selected for observation was the salivary reflex in dogs. A simple surgical operation moved the opening of the duct of the parotid salivary gland from the inside to the outside of the dog's cheek, so that the flow of saliva could be seen and accurately measured. The original of unconditioned stimulus which elicited the stimulus (for example, the ringing of a bell) along with the food for a number of trials, the bell or the conditioned stimulus eventually came to act as a substitute for the food and would cause the saliva to flow even though no food was given. A connection or association had been established between the conditioned stimulus and the activity of the salivary response or, more simply, the salivary C.R.

Pavlov and his collaborators found in different experiments that many things could be used as conditioned stimuli. Whistles, lights, touching the dog's flank, even mild electric shocks functioned satisfactorily in this capacity. Each of these and many more, when combined with food for a sufficient number of trials, produced conditioned stimulus alone caused the C.R. to die out gradually. The disappearance of a C.R. under the circumstances was called the extinction of the conditioned response. An extinguished response could be rapidly reconditioned by reinforcing the conditioned with the unconditioned stimulus for a few trials. Even where no reinforcement with the unconditioned stimulus was given, a conditioned response which had been extinguished could be called out at a later time, provided a sufficiently long rest interval had been allowed to elapse after the extinction. The reappearance of a previously extinguished C.R. in this way, without subsequent reinforcement, was called by Pavlov spontaneous recovery.

In applying the salivary conditioning technique to human subjects, two principal methods have been employed. The first of these requires an especially shaped suction cup or saliometer, which fits over the opening of one of the salivary ducts inside the mouth and carries the saliva out of the mouth by means of a small tube. The second method makes use of rolls of dental cotton which are carefully weighed and then placed under the subject's tongue. After a C.R. has occurred, the cotton is removed and weighed again. The difference between the weights before and after the response indicates the amount of saliva which was secreted. The phenomena of extinction, reconditioning, spontaneous recovery, and so on, originally discovered by

Pavlov on dogs, are all demonstrable in human subjects by one or both of these methods.

Read after Lesson V.

Conditioning and motor learning

Since motor learning deals only with non-verbal tasks, it can be studied in animals, in infants, and in other instances where linguistic material cannot be employed. In a way, motor learning is therefore fundamental to the study of national learning and to other more complex psychological processes. To conduct an experiment in motor learning the experimenter sets the subjects some problem or task forming to master and observes and measures the improvement in the subject's method of performing the task upon successive trials. The dependent variable is the number of trials or the degree of training.

Undoubtedly, the most widely used of all devices for the study of motor learning is the spatial maze; which has a variety of forms, from the elevated maze for animal subjects to the paper and pencil maze for humans. Other devices include mirror drawing, tossing balls at a target, and the pursuit-meter. Tasks like these, which require the slow or gradual development of a skill for their mastery, are to be contrasted with tasks in which the learning consists of the discovery of some general principle. In the latter instance the correct method of solution may dawn upon the learner suddenly, like a bright idea. The Unweg or detour experiment, in which the subject must find his way around a barrier; and the multiple-choice procedure are techniques for the study of insight learning of this sort.

In recording progress in a learning experiment, the standard method is by means of the learning curve, a graphical device for showing the relationship between trials and performance. Curves of decreasing score, like time and error curves, take special account of the subject's early mistakes. They may be thought of as recording the subject's improvement in learning what not to do. Curves of increasing score, on the other hand, show more clearly how the subject improves in learning what to do. Most learning curves, both increasing and decreasing in score, have been found to be negatively accelerated. The Vencent method, a technique for equating curves of varying length, is employed for combining the learning curves of different subjects into a single composite curve.

Although conditioning was first extensively studied by means of the salivary reflex and was called by Pavlov the conditioned reflex, it has since been produced with a variety of responses, many of which are not true reflexes in any sense of the word. It is essentially the process of association expressed in the more objective laboratory concepts of stimulus and response. The fundamentals of the method consists of two steps: (1) there must exist an unconditioned S – R situation that works, (2) there must be regularly paired with this in the proper manner a neutral and conditioned stimulus. Forward conditioning, in which the conditioned stimulus precedes

the unconditioned stimulus, has been found to be more efficient, than simultaneous or backward conditioning.

The conditioning technique can be used to measure both absolute and differential threshold. In higher-order conditioning, conditioned responses can also be built upon already existing CRs, provided that motivation is maintained. From the point of view of experimental psychology, conditioning is best thought of as a laboratory procedure for the study of learning problems of all sorts, rather than as a "kind" or category of learning to be sharply differentiated from maze learning, insightful learning, or any other learning. It is a method which emphasizes a few specific stimuli and which usually deals with the minute analysis of a single movement, rather than with gross and generalized behavior.

Read after Lesson VI.

Reward

Psychologists define the word reward as a 'positive incentive capable of arousing pleasure'. They study the learning ability of animals by offering rewards such as food or drink for correct solutions to problems. At school and college praise for good work, excellent and good marks are rewards. In the adult world, money and promotion are rewards. In the adult world, money and promotion are rewards. All such rewards have this in common: they are given after the task has been learnt or the work has been accomplished. Such rewards are called extrinsic awards because they do not belong to the task itself; they are beyond or outside the task.

There are also intrinsic rewards in which pleasure accompanies the actual performance of the task; the task is enjoyed for its own sake, it is not performed simply for the extrinsic reward that comes after its successful conclusion. Hobbies are examples of activities in which the rewards are intrinsic. Effort and energy are required in a hobby, but the work is pleasurable.

Many jobs bring intrinsic and extrinsic rewards. Any job can be intrinsically rewarding. What is important is the attitude of the worker.

In order for a job to bring satisfaction a person must feel that it presents sufficient challenge to maintain his interest. If it is too difficult, he will lose interest. If it is too easy, he will become bored and dislike it. The jobs in which intrinsic rewards are stressed are invariably concerned with people rather than with things. Work which involves helping people is satisfying, but it is also challenging because no two individuals ever behave in exactly the same way. No situation will be repeated; thus monotony can be avoided.

Everything should be done to ensure that the work offers intrinsic reward as well as extrinsic. If a Sixth Former is studying subjects that he likes he will make better progress than if his only motive for study is the extrinsic reward of the examination success. If a man is doing a job which gives him pleasure as well as money, he will experience a deeper sense of fulfillment. However great the extrinsic reward, it is difficult for anyone to retain his enthusiasm and his happiness if the intrinsic reward

is entirely lacking. Ideally the main purpose of extrinsic reward is to help us over those periods when work presents difficulties. As members of society we have obligations. We depend on other people and they depend on us. However enjoyable our work may be, there will be times when we act from a sense of duty rather than from pleasure. One of the purposes of education is to help us to cannot always do what we realize that we ourselves want. Some activities are often thought to be pleasures rather than duties: playing football, dancing, playing the guitar and acting. But once we undertake any of these as a job, there will be moments when we want to be excused from taking part. Any activity, however pleasurable it seems at first, can become a chore, and correspondingly, any activity can bring pleasure, even doing the washing-up or polishing a floor – it depends on the individual and his attitude to the occasion.

People enjoy hobbies – yet these are activities into which they need to put effort and industry. They may not count as work, but they require as much thought, time and persistence as is needed in work. This is a prime example of intrinsic reward.

Read after Lesson VII.

Memory

Memory is a commonsense concepts as well as intelligence but it has caused much trouble to psychologists. For some time it was asserted that we should speak of memories rather than of memory, since the ability to remember seemed to be specific to the material concerned. A man who could not remember the registration number of his own car might be able to tell you the score of a football match ten years ago. The artist who had just painted a picture from memory might be unable to remember where he had left his hat. It all seems very confusing but some order is coming out of it all.

The present position appears to be that we can postulate three factors concerned with what is normally thought of memory. One of these is span memory, which has more relation to perceptual speed than to the other two memory factors. It is simply a measure of how much one can retain of unrelated material (such as numbers or letters) after one presentation.

We have already pointed out that the limitations on this capacity are of three-bit order which we find in perceptual activity and which we might expect to underlie, probably because some further influence is involved in the latter.

The second form of memory is rote memory, which again involves a time period of minutes rather than seconds.

Related to this is the third form of memory, that for meaningful material. The factor is doubtless because it depends on understanding, and the availability of suitable coding material. Some tests which might be expected to involve chiefly this factor, e.g. remembering a paragraph with considerable detail so as to be able to answer specific questions about the content, turn out to involve chiefly the verbal factor. All

things considered, therefore, it looks as though we can consider rote memory to be the key to the memory group.

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