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Учебное пособие «Английский язык для психологов» предназначено для освоения основной образовательной программы высшего профессионального образования 37.05.01 – «Клиническая психология». Освоение дисциплины «Иностранный язык» рассчитано на 360 часов, в том числе 226 часов аудиторных занятий и 108 часов самостоятельной работы.

Учебное пособие «Английский язык для психологов» разработано в соответствии с Федеральным государственным образовательным стандартом высшего профессионального образования по направлению подготовки Клиническая психология. Учебным планом и Основной образовательной программой и предназначено для студентов 1 курса.

В пособии представлены аутентичные тексты на английском языке, посвященные истории психологии и вопросам общей психологии. Модуль по истории психологии включает аутентичные тексты о разных направлениях в психологии: бихевиоризм, психоанализ, гештальт-психология. Модуль, посвященный вопросам общей психологии, включает такие темы, как восприятие, память, интеллект, внимание, многозадачность. После каждого текста представлены задания и упражнения, направленные на понимание прочитанных текстов, усвоение и закрепление лексики.

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What Is Clinical Psychology?

Clinical psychology is the branch of psychology concerned with the assessment and treatment of mental illness, abnormal behavior and psychiatric problems. This field integrates the science of psychology with the treatment of complex human problems, making it an exciting career choice for people who are looking for a challenging and rewarding field.

American psychologist Lightner Witmer first introduced the term in a 1907 paper. Witmer, a former student of Wilhelm Wundt, defined clinical psychology as “the study of individuals, by observation or experimentation, with the intention of promoting change”. Today, clinical psychology is one of the most popular subfields within psychology.

Clinical Psychology Education

In the U.S., clinical psychologists usually have a doctorate in psychology and receive training in clinical settings. The educational requirements to work in clinical psychology are quite rigorous, and most clinical psychologists spend between four to six years in graduate school after earning a bachelor’s degree.

There are two different types of degrees available in clinical psychology – a Ph.D. and a Psy.D. Generally speaking, Ph.D. program are centered on research, while Psy.D. programs are practice-oriented. Some students may also find graduate programs that offer a terminal master’s degree in clinical psychology.

Before choosing a clinical psychology program, students should always check to be sure that the program is accredited by the American Psychological Association. After completing an accredited graduate training program, prospective clinical psychologists must also complete a period of supervised training and an examination. Specific licensure requirements vary by state, so students should always check with their state’s licensing board to learn more.

U.K. students can pursue a doctorate level degree in clinical psychology (D.Clin.Psychol. or Clin.Psy.D.) through programs sponsored by the National Health Service. These programs are generally very competitive and are focused on both research and practice. Students interested in enrolling in one of these program must have an undergraduate degree in a psychology program approved by the British Psychological Society in addition to experience requirements.
Clinical Psychology Work Settings and Job Roles

Clinical psychologists often work in medical settings, private practice or in academic positions at universities and colleges. Some clinical psychologists work directly with clients, often those who suffer from severe psychiatric disorders.

Some of the job roles performed by those working in clinical psychology include:
- Assessment and diagnosis of psychological disorders
- Treatment of psychological disorders
- Offering testimony in legal settings
- Teaching
- Conducting research
- Drug and alcohol treatment
- Creating and administering program to treat and prevent social problems

Other clinical psychologists may work in private therapeutic settings offering short-term and long-term outpatient services to clients who need help coping with psychological distress. Some clinical psychologists work in other settings, often performing research, teaching university-level courses and offering consultation services.

Approaches to Clinical Psychology

Clinical psychologists who work as psychotherapists often utilize different treatment approaches when working with clients. While some clinicians focus on a very specific treatment outlook, many use what is referred to as an eclectic approach. This involves drawing on different theoretical methods to develop the best treatment plan for each individual client.

Some of the major theoretical perspectives within clinical psychology include:
- **Psychodynamic Approach:** This perspective grew out of the work of psychoanalyst Sigmund Freud, who believed that the unconscious mind played an important role in our behavior. Psychologists who utilize this perspective may use techniques such as free association to investigate a client’s underlying, unconscious motivations.

- **Cognitive Behavioral Perspective:** This approach to clinical psychology developed from the behavioral and cognitive schools of thought. Clinical psychologists using this perspective will look at how a client’s feelings, behaviors and thoughts interact. Cognitive-behavioral therapy often focuses on changing thoughts and behaviors that contribute to psychological distress.

- **Humanistic Perspective:** This approach to clinical psychology grew out of the work of humanist thinkers such as Abraham Maslow and Carl Rogers. This perspective looks at the client more holistically and is focused on such things as self-actualization and helping people realize their full potential.
Clinical Psychology

Information about the Clinical Psychology Graduate Major

UCLA’s Clinical Psychology program is one of the largest and most highly regarded and selective in the country, and aims to produce future faculty, researchers, and leaders in clinical psychology. The program has been continuously accredited by the American Psychological Association for more than 50 years. Admissions decisions are based on evidence of research interests and extensive experience, psychology major or equivalent, outstanding academic and GRE performance, dedication to and suitability for a career as a clinical scientist, and superior letters of recommendation. The distinguished faculty and outstanding graduate students are engaged in research activities addressing a host of critical psychological and mental health problems. Their research and clinical work are facilitated by on-campus resources including the departmental Psychology Clinic, the Semel Neuropsychiatric Institute and Hospital, and the David Geffen School of Medicine.

The curriculum is designed to produce clinical scientists: clinically well-trained psychologists devoted to the continuous development of an empirical knowledge base in clinical psychology, with a particular emphasis on preparing graduates for employment in academic and research settings. The program’s breadth provides a foundation for a variety of professional functions involving issues of optimal development and psychological disability on an individual, couple, family, and community basis. At the same time, depending upon the student’s interests, there is opportunity for more intensive concentration in particular areas of clinical psychology.

Since the program stresses individualized and close supervision of the student in research and professional roles, flexibility in the student’s program is possible. Within the parameters set by faculty interests and practicum resources, there are specializations in child psychopathology and treatment, cognitive-behavior therapy, clinical assessment, adult psychopathology and treatment, family processes, assessment and intervention with distressed couples, community psychology, stress and coping, minority mental health, health psychology and behavioral medicine, and cross-cultural research on psychopathology and mental health. The faculty and other research resources of the Department make possible
an intensive concentration in particular areas of clinical psychology, while at the same time ensuring breadth of training.

Clinical psychology at UCLA is a six-year program including the full-time one-year internship. The curriculum in clinical psychology is based on a twelve-month academic year. The program includes a mixture of coursework, clinical training, teaching, and continuous involvement in research. Most of the fifteen clinical area faculty, along with numerous clinical psychologists from other campus departments, community clinics, and hospitals settings, contribute to clinical supervision. Clinical training experiences include two years of part-time practicum placements in the Psychology Clinic and local agencies. The required one-year full-time internship is undertaken after the student has passed the clinical qualifying examinations and the dissertation preliminary orals. The student receives the Ph.D. degree when both the dissertation and an approved internship are completed.
Unconscious mind

The unconscious mind (often simply called the unconscious) is all the processes of the mind which are not available to consciousness. In Western culture the concept has its origins in the romantic era and gained prominence in the writings of the Austrian neurologist Sigmund Freud. It might be defined as all those mental phenomena occurring within a person’s mind which the person is not conscious of. These phenomena include unconscious (often repressed) feelings, unconscious or automatic skills, unacknowledged perceptions, unconscious thoughts, unconscious habits and automatic reactions, complexes, hidden phobias and desires. Within psychoanalysis and analytical psychology the cognitive processes of the unconscious are considered to manifest in dreams in a symbolical form. Thus the unconscious mind can be seen as the source of dreams and automatic thoughts (those that appear without any apparent cause), the repository of forgotten memories (that may still be accessible to consciousness at some later time), and the locus of implicit knowledge (i.e. all of the things that we have learned so well that we do them without thinking). One familiar example of the operation of the unconscious is the tip-of-the-tongue phenomenon wherein one fails to immediately remember a given word but then has a flash of insight providing a solution, later on in the day. In this case, it is not that the word is forgotten, but that it needs to be retrieved from the unconscious mind.

It has been argued that consciousness is influenced by other parts of the mind. These such parts include unconsciousness as a personal habit, being unaware, and intuition. Terms related to semi-consciousness include: awakening, implicit memory, subliminal messages, trances, hypnagogia, and hypnosis. Furthermore, although sleep, sleep walking, dreaming, delirium and comas may signal the presence of unconscious processes, these processes are not the unconscious mind itself, but rather symptoms.

Historical overview

The term unconscious mind was coined by the 18th century German romantic philosopher Friedrich Schelling and later introduced into English by the poet and essayist Samuel Taylor Coleridge.

Articulating the idea of something not conscious has been a process of human thought and interpersonal influence for millennia. For example, influences
on thinking that originate from outside of an individual’s consciousness were re-
lected in the ancient ideas of temptation, divine inspiration, and the predominant
role of the gods in affecting motives and actions. The idea of internalised uncon-
scious processes in the mind was also instigated in antiquity and has been ex-
plored across a wide variety of cultures. Unconscious aspects of mentality were
referred to between 2500 and 600 BC in the Hindu texts known as the Vedas, found
today in Ayurvedic medicine.

Paracelsus is credited as the first to make mention of an unconscious aspect
of cognition in his work Von den Krankheiten (translates as “About illnesses”,
1567), and his clinical methodology created a cogent system that is regarded by
some as the beginning of modern scientific psychology. Shakespeare explored the
role of the unconscious in many of his plays, without naming it as such. In ad-
dition, Western philosophers such as Spinoza, Leibniz, Schopenhauer, Kierke-
gaard, and Nietzsche, developed a western view of the mind which foreshadowed
the famous theories of Freud. As psychologist Jacques Van Rillaer pointed out,
“the unconscious was not discovered by Freud. In 1890, when psychoanalysis
was still unheard of, William James, in his monumental treatise on psychology,
examined the way Schopenhauer, von Hartmann, Janet, Binet and others had
used the term ‘unconscious’ and ‘subconscious’”. Moreover, as historian of psy-
chology Mark Altschule observed, “It is difficult – or perhaps impossible – to
find a nineteenth-century psychologist or psychiatrist who did not recognize un-
conscious cerebration as not only real but of the highest importance”.

**Unconscious processes and the unconscious mind**

Some neuroscientific research supports the existence of the unconscious
mind. For example, researchers at Columbia University Medical Center have
found that fleeting images of fearful faces – images that appear and disappear
so quickly that they escape conscious awareness – produce unconscious anxiety
that can be detected in the brain with the latest neuroimaging machines. The con-
scious mind is thus hundreds of milliseconds slower than unconscious processes.

To understand this type of research, a distinction has to be made between
unconscious processes and the unconscious mind (neuroscientists are far more
likely to examine the former). The unconscious mind and its expected psycho-
analytic contents also differ from unconsciousness, coma, and a minimally
conscious state. The difference in the uses of the terms can be explained, to
a degree, by our different hypotheses on its subject. One such conjecture is
the psychoanalytic theory.
Freud and the psychoanalytic unconscious

Sigmund Freud and his followers developed an account of the unconscious mind. It plays an important role in psychoanalysis.

Freud divided the mind into the conscious mind (or the ego) and the unconscious mind. The latter was then further divided into the id (or instincts and drive) and the superego (or conscience). In this theory, the unconscious refers to the mental processes of which individuals make themselves unaware. Freud proposed a vertical and hierarchical architecture of human consciousness: the conscious mind, the preconscious, and the unconscious mind – each lying beneath the other. He believed that significant psychic events take place “below the surface” in the unconscious mind, like hidden messages from the unconscious. He interpreted such events as having both symbolic and actual significance.

In psychoanalytic terms, the unconscious does not include all that is not conscious, but rather what is actively repressed from conscious thought or what a person is averse to knowing consciously. Freud viewed the unconscious as a repository for socially unacceptable ideas, wishes or desires, traumatic memories, and painful emotions put out of mind by the mechanism of psychological repression. However, the contents did not necessarily have to be solely negative. In the psychoanalytic view, the unconscious is a force that can only be recognized by its effects – it expresses itself in the symptom. In a sense, this view places the conscious self as an adversary to its unconscious, warring to keep the unconscious hidden. Unconscious thoughts are not directly accessible to ordinary introspection, but are supposed to be capable of being “tapped” and “interpreted” by special methods and techniques such as meditation, free association (a method largely introduced by Freud), dream analysis, and verbal slips (commonly known as a Freudian slip), examined and conducted during psychoanalysis. Seeing as these unconscious thoughts are normally cryptic, psychoanalysts are considered experts in interpreting their messages.

Freud later used his notion of the unconscious in order to explain certain kinds of neurotic behavior. Nevertheless, Freud’s theory of the unconscious was substantially transformed by some of his followers, among them Carl Jung and Jacques Lacan.
1. **Match the terms with their definitions**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subliminal</td>
<td>the experience of the transitional state from wakefulness to sleep</td>
</tr>
<tr>
<td>Tip of the tongue phenomenon</td>
<td>Resulting from processes of which the individual is not aware; existing or operating below the threshold of consciousness</td>
</tr>
<tr>
<td>Hypnagogia</td>
<td>a sleep disorder characterized by walking or other activity while seemingly still asleep.</td>
</tr>
<tr>
<td>Desire</td>
<td>To search for, find,</td>
</tr>
<tr>
<td>Sleep walking</td>
<td>a trancelike state that resembles sleep but is induced by a person whose suggestions are readily accepted by the subject</td>
</tr>
<tr>
<td>To retrieve</td>
<td>the subjective feeling that people have of being confident that they know the target word for which they are searching, yet they cannot recall this word</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>a mental state in which you are confused and not able to think or speak clearly usually because of fever or some other illness</td>
</tr>
<tr>
<td>delirium</td>
<td>the feeling of wanting something</td>
</tr>
</tbody>
</table>

2. **Fill in the gaps with the words from the box**

ego; repository; unconsciousness; dreams; psychological repression; unconscious mind;

1. The unconscious mind and its expected psychoanalytic contents also differ from …, coma, and a minimally conscious state.

2. The … … might be defined as all those mental phenomena occurring within a person’s mind which the person is not conscious of.

3. Within psychoanalysis and analytical psychology the cognitive processes of the unconscious are considered to manifest in … in a symbolical form.

4. Freud divided the mind into the conscious mind (or the …) and the unconscious mind.

5. Freud viewed the unconscious as a … for socially unacceptable ideas, wishes or desires, traumatic memories, and painful emotions put out of mind by the mechanism of … … .
3. Say if these statements are true or false

<table>
<thead>
<tr>
<th>Statement</th>
<th>true</th>
<th>false</th>
</tr>
</thead>
<tbody>
<tr>
<td>The unconscious mind is thus hundreds of milliseconds slower than conscious processes.</td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
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<td>Freud divided the mind into the conscious mind (or the ego) and the unconscious mind.</td>
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</tr>
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<td>Freud proposed a horizontal architecture of human consciousness: the conscious mind, the preconscious, and the unconscious mind</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Freud’s Structural and Topographical Models of Personality

Sigmund Freud’s Theory is quite complex and although his writings on psychosexual development set the groundwork for how our personalities developed, it was only one of five parts to his overall theory of personality. He also believed that different driving forces develop during these stages which play an important role in how we interact with the world.

Structural Model (id, ego, superego)

According to Freud, we are born with our Id. The id is an important part of our personality because as newborns, it allows us to get our basic needs met. Freud believed that the id is based on our pleasure principle. In other words, the id wants whatever feels good at the time, with no consideration for the reality of the situation. When a child is hungry, the id wants food, and therefore the child cries. When the child needs to be changed the id cries. When the child is uncomfortable, in pain, too hot, too cold, or just wants attention, the id speaks up until his or her needs are met.

The id doesn’t care about reality, about the needs of anyone else, only its own satisfaction. If you think about it, babies are not real considerate of their parents’ wishes. They have no care for time, whether their parents are sleeping, relaxing, eating dinner, or bathing. When the id wants something, nothing else is important.

Within the next three years, as the child interacts more and more with the world, the second part of the personality begins to develop. Freud called this part the Ego. The ego is based on the reality principle. The ego understands that other people have needs and desires and that sometimes being impulsive or selfish can hurt us in the long run. It’s the ego’s job to meet the needs of the id, while taking into consideration the reality of the situation.

By the age of five, or the end of the phallic stage of development, the Superego develops. The Superego is the moral part of us and develops due to the moral
and ethical restraints placed on us by our caregivers. Many equate the superego with the conscience as it dictates our belief of right and wrong.

In a healthy person, according to Freud, the ego is the strongest so that it can satisfy the needs of the id, not upset the superego, and still take into consideration the reality of every situation. Not an easy job by any means, but if the id gets too strong, impulses and self gratification take over the person’s life. If the superego becomes too strong, the person would be driven by rigid morals, would be judgmental and unbending in his or her interactions with the world.

**Topographical Model**

Freud believed that the majority of what we experience in our lives, the underlying emotions, beliefs, feelings, and impulses are not available to us at a conscious level. He believed that most of what drives us is buried in our **unconscious**. If you remember the Oedipus and Electra Complex, they were both pushed down into the unconscious, out of our awareness due to the extreme anxiety they caused. While buried there, however, they continue to impact us dramatically according to Freud.

The role of the unconscious is only one part of the model. Freud also believed that everything we are aware of is stored in our **conscious**. Our conscious makes up a very small part of who we are. In other words, at any given time, we are only aware of a very small part of what makes up our personality; most of what we are is buried and inaccessible.

The final part is the preconscious or subconscious. This is the part of us that we can access if prompted, but is not in our active conscious. It’s right below the surface, but still buried somewhat unless we search for it. Information such as our telephone number, some childhood memories, or the name of your best childhood friend is stored in the preconscious.

Because the unconscious is so large, and because we are only aware of the very small conscious at any given time, this theory has been likened to an iceberg, where the vast majority is buried beneath the water’s surface. The water, by the way, would represent everything that we are not aware of, we have not experienced, and that has not been integrated into our personalities, referred to as the nonconscious.
1. Say which of these statements are true or false

<table>
<thead>
<tr>
<th>Statement</th>
<th>true</th>
<th>false</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Structural model of personality includes id, ego and superego.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– The author of structural model of personality is Jung</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– We are born with superego</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Freud’s topographical mode of personality consists of 4 parts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– We are aware of the unconscious all time.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– This theory has been likened to a mountain.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Id allows us to get our basic needs met.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– The Superego develops by the age of three.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Many equate the superego with the conscience.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Match the terms and the definitions

<table>
<thead>
<tr>
<th>Term</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Unconscious</td>
<td>aware of one’s own existence, sensations, thoughts, surroundings, etc.</td>
</tr>
<tr>
<td>Subconscious</td>
<td>the ability to perceive, to feel, or to be conscious of events, objects, thoughts, emotions, or sensory patterns.</td>
</tr>
<tr>
<td>Conscious</td>
<td>the part of the mind containing instincts, impulses, images, and ideas that are not available for direct examination</td>
</tr>
<tr>
<td>Conscience</td>
<td>Id is based on this principle</td>
</tr>
<tr>
<td>Pleasure principle</td>
<td>an instinctive drive; urge</td>
</tr>
<tr>
<td>Personality</td>
<td>that part of the mind which is on the fringe of consciousness and contains material of which it is possible to become aware by redirecting attention</td>
</tr>
<tr>
<td>Caregiver</td>
<td>a person who has accepted responsibility for looking after a vulnerable neighbour or relative</td>
</tr>
<tr>
<td>Desire</td>
<td>the sense of right and wrong that governs a person’s thoughts and actions</td>
</tr>
<tr>
<td>awareness</td>
<td>the sum total of all the behavioural and mental characteristics by means of which an individual is recognized as being unique</td>
</tr>
<tr>
<td>impulse</td>
<td>an expressed wish; request</td>
</tr>
</tbody>
</table>
3. Fill in the gaps in the sentences using the words from the previous exercise

– The Superego is the moral part of us and develops due to the moral and ethical restraints placed on us by our … .
– Freud also believed that everything we are aware of is stored in our … .
– Most of what drives us is buried in our …. 
– If the id gets too strong, … and self gratification take over the person’s life.
– Many equate the superego with the … as it dictates our belief of right and wrong.
– The … is the part of us that we can access if prompted, but is not in our active conscious.
– Freud believed that the id is based on our … .
– The ego understands that other people have needs and … .
– The Oedipus and Electra Complex were both pushed down into the unconscious, out of our … due to the extreme anxiety they caused.
– The id is an important part of our … because as newborns, it allows us to get our basic needs met.
**Jung’s theory**

Jung’s theory divides the psyche into three parts. The first is the ego, which Jung identifies with the conscious mind. Closely related is the personal unconscious, which includes anything which is not presently conscious, but can be. The personal unconscious is like most people’s understanding of the unconscious in that it includes both memories that are easily brought to mind and those that have been suppressed for some reason. But it does not include the instincts that Freud would have included it.

But then Jung adds the part of the psyche that makes his theory stand out from all others: the collective unconscious. You could call it your “psychic inheritance”. It is the reservoir of our experiences as a species, a kind of knowledge we are all born with. And yet we can never be directly conscious of it. It influences all of our experiences and behaviors, most especially the emotional ones, but we only know about it indirectly, by looking at those influences.

There are some experiences that show the effects of the collective unconscious more clearly than others: The experiences of love at first sight, of déjà vu (the feeling that you’ve been here before), and the immediate recognition of certain symbols and the meanings of certain myths, could all be understood as the sudden conjunction of our outer reality and the inner reality of the collective unconscious. Grander examples are the creative experiences shared by artists and musicians all over the world and in all times, or the spiritual experiences of mystics of all religions, or the parallels in dreams, fantasies, mythologies, fairy tales, and literature.

A nice example that has been greatly discussed recently is the near-death experience. It seems that many people, of many different cultural backgrounds, find that they have very similar recollections when they are brought back from a close encounter with death. They speak of leaving their bodies, seeing their bodies and the events surrounding them clearly, of being pulled through a long tunnel towards a bright light, of seeing deceased relatives or religious figures waiting for them, and of their disappointment at having to leave this happy scene to return to their bodies. Perhaps we are all “built” to experience death in this fashion.
Archetypes

The contents of the collective unconscious are called **archetypes**. An archetype is an unlearned tendency to experience things in a certain way.

The archetype has no form of its own, but it acts as an “organizing principle” on the things we see or do. It works the way that instincts work in Freud’s theory: At first, the baby just wants something to eat, without knowing what it wants. It has a rather indefinite yearning which, nevertheless, can be satisfied by some things and not by others. Later, with experience, the child begins to yearn for something more specific when it is hungry – a bottle, a cookie, a broiled lobster, a slice of New York style pizza.

The archetype is like a black hole in space: You only know its there by how it draws matter and light to itself.

The mother archetype

The **mother archetype** is a particularly good example. All of our ancestors had mothers. We have evolved in an environment that included a mother or mother-substitute. We would never have survived without our connection with a nurturing-one during our times as helpless infants.

So the mother archetype is our built-in ability to recognize a certain relationship, that of “mothering”. Jung says that this is rather abstract, and we are likely to project the archetype out into the world and onto a particular person, usually our own mothers. Even when an archetype doesn’t have a particular real person available, we tend to personify the archetype, that is, turn it into a mythological “story-book” character. This character symbolizes the archetype.

The mother archetype is symbolized by the primordial mother or “earth mother” of mythology, by Eve and Mary in western traditions, and by less personal symbols such as the church, the nation, a forest, or the ocean. According to Jung, someone whose own mother failed to satisfy the demands of the archetype may well be one that spends his or her life seeking comfort in the church, or in identification with “the motherland”, or in meditating upon the figure of Mary.

The shadow

Sex and the life instincts in general are, of course, represented somewhere in Jung’s system. They are a part of an archetype called the **shadow**. It derives from our prehuman, animal past, when our concerns were limited to survival and reproduction, and when we weren’t self-conscious.
It is the “dark side” of the ego, and the evil that we are capable of is often stored there. Actually, the shadow is amoral – neither good nor bad, just like animals. An animal is capable of tender care for its young and vicious killing for food, but it doesn’t choose to do either. It just does what it does. It is “innocent”. But from our human perspective, the animal world looks rather brutal, inhuman, so the shadow becomes something of a garbage can for the parts of ourselves that we can’t quite admit to.

Symbols of the shadow include the snake (as in the garden of Eden), the dragon, monsters, and demons. It often guards the entrance to a cave or a pool of water, which is the collective unconscious. Next time you dream about wrestling with the devil, it may only be yourself you are wrestling with!

**The persona**

The persona represents your public image. The word is, obviously, related to the word person and personality, and comes from a Latin word for mask. So the persona is the mask you put on before you show yourself to the outside world. Although it begins as an archetype, by the time we are finished realizing it, it is the part of us most distant from the collective unconscious.

At its best, it is just the “good impression” we all wish to present as we fill the roles society requires of us. But, of course, it can also be the “false impression” we use to manipulate people’s opinions and behaviors. And, at its worst, it can be mistaken, even by ourselves, for our true nature: Sometimes we believe we really are what we pretend to be!

**1. Say if these statements are true, false or not given**

<table>
<thead>
<tr>
<th>Statement</th>
<th>true</th>
<th>false</th>
<th>Not given</th>
</tr>
</thead>
<tbody>
<tr>
<td>The archetype has no form of its own, but it acts as an “organizing principle” on the things we see or do.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jung adds the part of the psyche that makes his theory stand out from all others: the collective unconscious.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The personal unconscious includes instincts</td>
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<td></td>
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<tr>
<td>The creative experiences shared by artists and musicians all over the world and in all times are the effects of the collective unconscious.</td>
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<td></td>
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<tr>
<td>The collective unconscious includes anything which is not presently conscious, but can be.</td>
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<td></td>
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</tr>
<tr>
<td>The collective unconscious does not influence all of our experiences and behaviors, most especially the emotional ones.</td>
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</tr>
</tbody>
</table>
2. Match the terms and definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inheritance</td>
<td>a part of the unconscious mind incorporating patterns of memories, instincts, and experiences common to all mankind. These patterns are inherited, may be arranged into archetypes, and are observable through their effects on dreams, behaviour, etc.</td>
</tr>
<tr>
<td>Personal unconscious</td>
<td>one of the inherited mental images postulated by Jung as the content of the collective unconscious.</td>
</tr>
<tr>
<td>psyche</td>
<td>The thoughts, ideas, emotions, and other mental phenomena acquired and repressed during one’s lifetime.</td>
</tr>
<tr>
<td>Near-death experience</td>
<td>a particular incident, feeling, etc., that a person has undergone, direct personal participation or observation; actual knowledge or contact</td>
</tr>
<tr>
<td>Archetype</td>
<td>the experience of perceiving a new situation as if it had occurred before. It is sometimes associated with exhaustion or certain types of mental disorder</td>
</tr>
<tr>
<td>Bring to mind</td>
<td>An instantaneous attraction to someone or something.</td>
</tr>
<tr>
<td>Collective unconscious</td>
<td>an experience, instances of which have been widely reported, in which a person near death is apparently outside his body and aware of it and the attendant circumstances as separate from him</td>
</tr>
<tr>
<td>recollection</td>
<td>To cause you to think of someone or something.</td>
</tr>
<tr>
<td>Experience</td>
<td>the derivation of characteristics of one generation from an earlier one by heredity.</td>
</tr>
<tr>
<td>Déjà vu</td>
<td>the human mind or soul.</td>
</tr>
<tr>
<td>Love at first sight</td>
<td>the act of recalling something from memory; the ability to remember.</td>
</tr>
</tbody>
</table>
What Is Behaviorism?

Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I’ll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors.

– John Watson, *Behaviorism*, 1930

Behavioral psychology, also known as behaviorism, is a theory of learning based upon the idea that all behaviors are acquired through conditioning. Conditioning occurs through interaction with the environment. According to behaviorism, behavior can be studied in a systematic and observable manner with no consideration of internal mental states.

There are two major types of conditioning:

1. Classical conditioning is a technique used in behavioral training in which a naturally occurring stimulus is paired with a response. Next, a previously neutral stimulus is paired with the naturally occurring stimulus. Eventually, the previously neutral stimulus comes to evoke the response without the presence of the naturally occurring stimulus. The two elements are then known as the conditioned stimulus and the conditioned response.

2. Operant conditioning Operant conditioning (sometimes referred to as instrumental conditioning) is a method of learning that occurs through rewards and punishments for behavior. Through operant conditioning, an association is made between a behavior and a consequence for that behavior.

**Major Thinkers in Behaviorism**

- Ivan Pavlov
- B.F. Skinner
- Edward Thorndike
- John B. Watson
- Clark Hull

**Criticisms of Behaviorism**

- Many critics argue that behaviorism is a one-dimensional approach to understanding human behavior and that behavioral theories do not account for free will and internal influences such as moods, thoughts and feelings.
Behaviorism does not account for other types of learning, especially learning that occurs without the use of reinforcement and punishment.

People and animals are able to adapt their behavior when new information is introduced, even if a previous behavior pattern has been established through reinforcement.

**Strengths of Behaviorism**

- Behaviorism is based upon observable behaviors, so it is easier to quantify and collect data and information when conducting research.
- Effective therapeutic techniques such as intensive behavioral intervention, behavior analysis, token economies are all rooted in behaviorism. These approaches are often very useful in changing maladaptive or harmful behaviors in both children and adults.

**Final Thoughts**

While behaviorism is not as dominant today as it was during the middle of the 20th-century, it still remains an influential force in psychology. Outside of psychology, animal trainers, parents, teachers and many others make use of basic behavioral principles to help teach new behaviors and discourage unwanted ones.

**What is Learning?**

Learning is a relatively permanent change in behavior that is the result of experience. During the first half of the twentieth century, the school of thought known as behaviorism rose to dominate psychology and sought to explain the learning process. The three major types of learning described by behavioral psychology are classical conditioning, operant conditioning and observational learning.

**1. Classical Conditioning**

Classical conditioning is a learning process in which an association is made between a previously neutral stimulus and a stimulus that naturally evokes a response. For example, in Pavlov’s classic experiment, the smell of food was the naturally occurring stimulus that was paired with the previously neutral ringing of the bell. Once an association had been made between the two, the sound of the bell alone could lead to a response.

**2. Operant Conditioning**

Operant conditioning is a learning process in which the probability of response occurring is increased or decreased due to reinforcement or punishment.
First studied by Edward Thorndike and later by B.F. Skinner, the underlying idea behind operant conditioning is that the consequences of our actions shape voluntary behavior.

3. Observational Learning

Observational learning is a process in which learning occurs through observing and imitating others. As demonstrated in Albert Bandura’s classic “Bobo Doll” experiments, people will imitate the actions of others without direct reinforcement. Four important elements are essential for effective observational learning: attention, motor skills, motivation and memory.

4. The Little Albert Experiment

The “Little Albert” experiment was a famous psychology experiment conducted by behaviorist John B. Watson and graduate student Rosalie Raynor. Previously, Russian physiologist Ivan Pavlov had conducted experiments demonstrating the conditioning process in dogs. Watson was interested in taking Pavlov’s research further to show that emotional reactions could be classically conditioned in people.

The participant in the experiment was a child that Watson and Raynor called “Albert B.”, but is known popularly today as Little Albert. Around the age of nine months, Watson and Raynor exposed the child to a series of stimuli including a white rat, a rabbit, a monkey, masks and burning newspapers and observed the boy’s reactions. The boy initially showed no fear of any of the objects he was shown.

The next time Albert was exposed the rat, Watson made a loud noise by hitting a metal pipe with a hammer. Naturally, the child began to cry after hearing the loud noise. After repeatedly pairing the white rat with the loud noise, Albert began to cry simply after seeing the rat.

Watson and Raynor wrote:

“The instant the rat was shown, the baby began to cry. Almost instantly he turned sharply to the left, fell over on [his] left side, raised himself on all fours and began to crawl away so rapidly that he was caught with difficulty before reaching the edge of the table”.

Elements of Classical Conditioning in the Little Albert Experiment

The Little Albert experiment presents an example of how classical conditioning can be used to condition an emotional response.
Bobo Doll experiment

For the experiment, each child was exposed to the scenario individually, so as not to be influenced or distracted by classmates. The first part of the experiment involved bringing a child and the adult model into a playroom. In the playroom, the child was seated in one corner filled with highly appealing activities such as stickers and stamps. The adult model was seated in another corner containing a toy set, a mallet, and an inflatable Bobo doll. Before leaving the room, the experimenter explained to the child that the toys in the adult corner were only for the adult to play with.

During the aggressive model scenario, the adult would begin by playing with the toys for approximately one minute. After this time the adult begins to show aggression towards the Bobo doll. Examples of this include hitting the Bobo doll and using the toy mallet to hit the Bobo doll in the face. After a period of about 10 minutes, the experimenter came back into the room, and took the child into another playroom. The non-aggressive adult model simply played with the small toys for the entire 10 minute-period. In this situation, the Bobo doll was completely ignored by the model then the child was taken out of the room.

The next stage placed the child and experimenter into another room filled with interesting toys: a truck, dolls. There, the child was invited to play with the toys. After about 2 minutes the experimenter decides that the child is no longer allowed to play with the toys. This was done to build up frustration. The experimenter says that the child may play with the toys in the experimental room including both aggressive and non-aggressive toys. In the experimental room the child was allowed to play for the duration of 20 minutes while the experimenter evaluated the child’s play.

The first measure recorded was based on physical aggression. This included punching or kicking the Bobo doll, sitting on the Bobo doll, hitting it with a mallet, and tossing it around the room. Verbal aggression was the second measure recorded. The judges counted each time the children imitated the aggressive adult model and recorded their results. The third measure was the amount of times the mallet was used to display other forms of aggression than hitting the doll. The final measure includes modes of aggression shown by the child that were not direct imitation of the role-model’s behavior.
1. **Say which of these statements are true or false**

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operant conditioning is a learning process in which the probability of response occurring is increased or decreased due to reinforcement or punishment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major thinkers in behaviorism are Ivan Pavlov, Jung, Freud, Watson.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behaviorism does not account for other types of learning, especially learning that occurs without the use of reinforcement and punishment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People and animals are not able to adapt their behavior.</td>
<td></td>
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</tr>
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<td>Learning is a relatively permanent change in behavior that is the result of experience.</td>
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<td>Observational learning is a process in which learning occurs through observing and imitating others.</td>
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</table>

2. **Match the terms with their definitions**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditioning</td>
<td>A type of behavior that inhibits a person’s ability to adjust to particular situations.</td>
</tr>
<tr>
<td>Behaviorism</td>
<td>A consequence that will strengthen an organism’s future behavior whenever that behavior is preceded by a specific antecedent stimulus.</td>
</tr>
<tr>
<td>Learning</td>
<td>Something that stimulates or acts as an incentive.</td>
</tr>
<tr>
<td>Punishment</td>
<td>A temporary state of mind or temper.</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>The learning process by which the behavior of an organism becomes dependent on an event occurring in its environment.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mood</td>
<td>any relatively permanent change in behavior that occurs as a direct result of experience</td>
</tr>
<tr>
<td>Token economy</td>
<td>possession of the qualities required to do something; necessary skill, competence, or power</td>
</tr>
<tr>
<td>Maladaptive behavior</td>
<td>a movement in psychology and philosophy that emphasized the outward behavioral aspects of thought and dismissed the inward experiential, and sometimes the inner procedural, aspects as well</td>
</tr>
<tr>
<td>Ability</td>
<td>any aversive stimulus administered to an organism as part of training</td>
</tr>
<tr>
<td>stimulus</td>
<td>a type of psychotherapy in which the inmates of an institution are rewarded for good behavior with tokens that can be exchanged for privileges</td>
</tr>
</tbody>
</table>

3. **Put the verbs in brackets in passive form**

The three major types of learning which (describe) by behavioral psychology are classical conditioning, operant conditioning and observational learning.

Classical conditioning is a learning process in which an association (make) between a previously neutral stimulus and a stimulus that naturally evokes a response.

Behavioral psychology is a theory of learning based upon the idea that all behaviors (acquire) through conditioning.

The two elements (know) as the conditioned stimulus and the conditioned response.
How Ivan Pavlov Discovered Classical Conditioning

The concept of classical conditioning is studied by every entry-level psychology student, so it may be surprising to learn that the man who first noted this phenomenon was not a psychology at all. Ivan Pavlov was a noted Russian physiologist who won the 1904 Nobel Prize for his work studying digestive processes. It was while studying digestion in dogs that Pavlov noted an interesting occurrence – his dogs would begin to salivate whenever an assistant entered the room.

In his digestive research, Pavlov and his assistants would introduce a variety of edible and non-edible items and measure the saliva production that the items produced. Salivation, he noted, is a reflexive process. It occurs automatically in response to a specific stimulus and is not under conscious control. However, Pavlov noted that the dogs would often begin salivating in the absence of food and smell. He quickly realized that this salivary response was not due to an automatic, physiological process.

The Development of Classical Conditioning Theory

Based on his observations, Pavlov suggested that the salivation was a learned response. The dogs were responding to the sight of the research assistants’ white lab coats, which the animals had come to associate with the presentation of food. Unlike the salivary response to the presentation of food, which is an unconditioned reflex, salivating to the expectation of food is a conditioned reflex.

Pavlov then focused on investigating exactly how these conditioned responses are learned or acquired. In a series of experiments, Pavlov set out to provoke a conditioned response to a previously neutral stimulus. He opted to use food as the unconditioned stimulus, or the stimulus that evokes a response naturally and automatically. The sound of a metronome was chosen to be the neutral stimulus. The dogs would first be exposed to the sound of the ticking metronome, and then the food was immediately presented.

After several conditioning trials, Pavlov noted that the dogs began to salivate after hearing the metronome. “A stimulus which was neutral had been superimposed upon the action of the inborn alimentary reflex”, Pavlov wrote of the results. “We observed that, after several repetitions of the combined stimulation, the sounds of the metronome had acquired the property of stimulating salivary
secretion”. In other words, the previously neutral stimulus (the metronome) had become what is known as a conditioned stimulus that then provoked a conditioned response (salivation).

The Impact of Pavlov’s Research

Pavlov’s discovery of classical conditioning remains one of the most important in psychology’s history. In addition to forming the basis of what would become behavioral psychology, the conditioning process remains important today for numerous applications, including behavioral modification and mental health treatment. Classical conditioning is often used to treat phobias, anxiety and panic disorders.

One interesting example of the practical use of classical conditioning principles is the use of taste aversion to prevent coyotes from preying on domestic livestock. A conditioned taste aversion occurs when a neutral stimulus (eating some type of food) is paired with an unconditioned response (becoming ill after eating the food). Unlike other forms of classical conditioning, this type of conditioning does not require multiple pairings in order for an association to form. In fact, taste aversions generally occur after just a single pairing. Ranchers have found useful ways to put this form of classical conditioning to good use to protect their herds. In one example, mutton was injected with a drug that produces severe nausea. After eating the poisoned meat, coyotes then avoided sheep herds rather than attack them.

While Pavlov’s discovery of classical conditioning formed an essential part of psychology’s history, his work continues to inspire further research today. Between the years 1997 and 2000, more than 220 articles appearing in scientific journals cited Pavlov’s early research on classical conditioning. While Pavlov may not have been a psychologist, his contributions to psychology helped to make the discipline what it is today and will likely continue to shape our understanding of human behavior for years to come.
The Science of Love: 
Harry Harlow & the Nature of Affection

During the first half of the 20th century, many psychologists believed that showing affection towards children was merely a sentimental gesture that served no real purpose.

Behaviorist John B. Watson once even went so far as to warn parents, “When you are tempted to pet your child, remember that mother love is a dangerous instrument”. According to many thinkers of the day, affection would only spread diseases and lead to adult psychological problems.

During this time, psychologists were motivated to prove their field as a rigorous science. The behaviorist movement dominated psychology and urged researchers to study only observable and measurable behaviors. An American psychologist named Harry Harlow, however, became interested in studying a topic that was not so easy to quantify and measure: love.

In a series of controversial experiments conducted in 1960s, Harlow demonstrated the powerful effects of love. By showing the devastating effects of deprivation on young rhesus monkeys, Harlow revealed the importance of a mother’s love for healthy childhood development. His experiments were often unethical and shockingly cruel, yet they uncovered fundamental truths that have heavily influenced our understanding of child development.

The Wire Mother Experiment:

Harlow noted that very little attention had been devoted to the experimental research of love. “Because of the dearth of experimentation, theories about the fundamental nature of affection have evolved at the level of observation, intuition, and guesswork, whether these have been proposed by psychologists, sociologists, anthropologists, physicians, or psychoanalyst”, he noted.

Many of the existing theories of love centered on the idea that the earliest attachment between a mother and child was merely a means for the child to obtain food, relieve thirst, and avoid pain. Harlow, however, believed that this behavioral view of mother-child attachment was an inadequate explanation.

Harlow’s most famous experiment involved giving young rhesus monkeys a choice between two different “mothers”. One was made of soft terrycloth, but
provided no food. The other was made of wire, but provided food from an attached baby bottle.

Harlow removed young monkeys from their natural mothers a few hours after birth and left them to be “raised” by these mother surrogates. The experiment demonstrated that the baby monkeys spent significantly more time with their cloth mother than with their wire mother. “These data make it obvious that contact comfort is a variable of overwhelming importance in the development of affectional response, whereas lactation is a variable of negligible importance”, Harlow explained (1958).

**Fear, Security, and Attachment:**

In a later experiment, Harlow demonstrated that young monkeys would also turn to their cloth surrogate mother for comfort and security. Using a strange situation similar to the one created by attachment researcher Mary Ainsworth, Harlow allowed the young monkeys to explore a room either in the presence of their surrogate mother or in her absence. Monkeys in the presence of their mother would use her as a secure base to explore the room.

When the surrogate mothers were removed from the room, the effects were dramatic. The young monkeys no longer had their secure base to explore the room and would often freeze up, crouch, rock, scream, and cry.

**The Impact of Harlow’s Research:**

While many experts derided the importance of parental love and affection, Harlow’s experiments offered irrefutable proof that love is vital for normal childhood development. Additional experiments by Harlow revealed the long-term devastation caused by deprivation, leading to profound psychological and emotional distress and even death. Harlow’s work, as well as important research by psychologists John Bowlby and Mary Ainsworth, helped to influence key changes in how orphanages, adoption agencies, social services groups and child care providers approached the care of children.

While Harry Harlow’s work led to acclaim and generated a wealth of research on love, affection, and interpersonal relationships, his own personal life soon began to crumble. After the terminal illness of his wife, he became engulfed by alcoholism and depression, eventually becoming estranged from his own children. Colleagues frequently described him as sarcastic, mean-spirited, misanthropic, chauvinistic, and cruel. Yet Harlow’s enduring legacy reinforced the importance of emotional support, affection, and love in the development of children.
**Gestalt**

The German word *Gestalt* literally means “configuration” or “figure” and is used to refer to any general pattern which manifests characteristics different than are inherent in its parts. For example, a musical piece has a Gestalt because the tune and melodies are characteristics which it has, but which none of the individual notes have. Similarly, a sentence has a Gestalt because it has a characteristic of its meaning which none of the individual words or letters have. These characteristics of the whole are called emergent properties or supervenient properties.

The concept of Gestalt is used in a theory when it attempts to treat its subjects as unified wholes because any attempt to simply deal with the parts will mean that vital properties of the whole will go unattended. For example, Gestalt psychology attempts to study human behavior as a whole phenomenon because individual aspects of the mind or consciousness would not be the same thing. The movement which leads to the creation of Gestalt Theory grew out of dissatisfaction with the more traditional atomistic methodology in science.

Beginning in the 1920s (although there were precedents which can be found even earlier), some philosophers and psychologists questioned the common methodological presuppositions which dictated that the study of any phenomenon had to proceed by breaking it down into constituent parts. Anything which could not be broken down could not be studied scientifically – as a result, important aspects of human experience were left to more mystical and religious explanations.

Both atomistic and Gestalt methodology are not, however, really at odds with one another. Both have the goal of describing and explaining the nature and of observed events – but whereas the former begins with the parts, the latter begins with the whole. In the middle, the two can meet. The latter, however, does not assume that these connections are neutral and that a description of the parts will necessarily lead to a description of the whole. In other words, it assumes that the whole is more than the sum of the parts.

Gestalt psychology was founded by German thinkers Max Wertheimer, Wolfgang Kohler and Kurt Koffka and focused on how people interpret the world. The Gestalt perspective formed partially as a response to the structuralism of Wilhelm Wundt, who focused on breaking down mental events and experiences to the smallest elements. Max Wertheimer noted that rapid sequences of perceptual events, such as rows of flashing lights, create the illusion of motion even when
there is none. This is known as the phi phenomenon. Motion pictures are based upon this principle, with a series of still images appearing in rapid succession to form a seamless visual experience.

According to Gestalt psychology, the whole is different than the sum of its parts. Based upon this belief, Gestalt psychologists developed a set of principles to explain perceptual organization, or how smaller objects are grouped to form larger ones. These principles are often referred to as the “laws of perceptual organization”.

However, it is important to note that while Gestalt psychologists call these phenomena “laws”, a more accurate term would be “principles of perceptual organization”. These principles are much like heuristics, which are mental shortcuts for solving problems.

1. **Say which of these statements are true or false**

<table>
<thead>
<tr>
<th>Statement</th>
<th>true</th>
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</tr>
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<tr>
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2. **Match the terms and the definitions**

<table>
<thead>
<tr>
<th>Term</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gestalt</td>
<td>a means of saving time or effort</td>
</tr>
<tr>
<td>Phi phenomenon</td>
<td>a false appearance or deceptive impression of reality</td>
</tr>
<tr>
<td>Mental shortcuts</td>
<td>the process by which an organism detects and interprets information from the external world by means of the sensory receptors</td>
</tr>
<tr>
<td>The whole</td>
<td>an arrangement of two or more things in a successive order</td>
</tr>
</tbody>
</table>
Perception | the illusion that when two lights are rapidly turned on and off in succession something appears to move backwards and forwards between them while the lights stay stationary
---|---
Heuristics | an assemblage of parts viewed together as a unit
Illusion | a perceptual pattern or structure possessing qualities as a whole that cannot be described merely as a sum of its parts
Interpret | a method or set of rules for solving problems other than by algorithm
Sequence | to clarify or explain the meaning of; elucidate

### 3. Fill in the gaps with prepositions

1. Gestalt psychology was founded _______ German thinkers Max Wertheimer, Wolfgang Kohler and Kurt Koffka.
2. Gestalt focused _____ how people interpret the world.
3. The German word *Gestalt* is used to refer to any general pattern which manifests characteristics different than are inherent _____ its parts.
4. The movement which leads ____ the creation of Gestalt Theory grew out ______ dissatisfaction with the more traditional atomistic methodology in science.
5. The common methodological presuppositions dictated that the study of any phenomenon had to proceed by breaking it down _____ constituent parts.
6. Gestalt psychologists developed a set ____ principles to explain perceptual organization, or how smaller objects are grouped _____ form larger ones
7. The “principles of perceptual organization” are much like heuristics, which are mental shortcuts _____ solving problems.
8. Motion pictures are based _______ the principle of phi-phenomenon, with a series of still images appearing __________ rapid succession to form a seamless visual experience.
Color Psychology

How Colors Impact Moods, Feelings, and Behaviors

Do you feel anxious in a yellow room? Does the color blue make you feel calm and relaxed? Artists and interior designers have long understood how color can dramatically affect moods, feelings and emotions. It is a powerful communication tool and can be used to signal action, influence mood and cause physiological reactions. Certain colors can raise blood pressure, increase metabolism or cause eyestrain.

Of course, your feelings about color can also be deeply personal and are often rooted in your own experience or culture. For example, while the color white is used in many Western countries to represent purity and innocence, it is seen as a symbol of mourning in many Eastern countries.

Why is color such a powerful force in our lives? What effects can it have on our bodies and minds? Continue reading to further explore the history of color including how it’s used, the effects it may have and some of the most recent research on color psychology.

What Is Color?

In 1666, English scientist Sir Isaac Newton discovered that when pure white light passes through a prism, it separates into all of the visible colors. Newton also found that each color is made up of a single wavelength and cannot be separated any further into other colors.

Further experiments demonstrated that light could be combined to form other colors. For example, red light mixed with yellow light creates an orange color. Some colors, such as yellow and purple, cancel each other out when mixed and result in a white light.

If you have ever painted, you have probably noticed how certain colors can be mixed to create other colors.

Color Psychology – The Psychological Effects of Color

While perceptions of color are somewhat subjective, there are some color effects that have universal meaning. Colors in the red area of the color spectrum are known as warm colors and include red, orange and yellow. These warm colors evoke emotions ranging from feelings of warmth and comfort to feelings of anger and hostility.
Colors on the blue side of the spectrum are known as cool colors and include blue, purple and green. These colors are often described as calm, but can also call to mind feelings of sadness or indifference.

**Color Psychology as Therapy**

Several ancient cultures, including the Egyptians and Chinese, practiced chromotherapy, or using colors to heal. Chromotherapy is sometimes referred to as light therapy or colourology and is still used today as a holistic or alternative treatment.

In this treatment:
- **Red** was used to stimulate the body and mind and to increase circulation.
- **Yellow** was thought to stimulate the nerves and purify the body.
- **Orange** was used to heal the lungs and to increase energy levels.
- **Blue** was believed to soothe illnesses and treat pain.
- **Indigo** shades were thought to alleviate skin problems.

Most psychologists view color therapy with skepticism and point out that the supposed effects of color have been exaggerated. Colors also have different meanings in different cultures. Research has demonstrated in many cases that the mood-altering effects of color may only be temporary. A blue room may initially cause feelings of calm, but the effect dissipates after a short period of time.

Studies have also shown that certain colors can have an impact on performance. Exposing students to the color red prior to an exam has been shown to have a negative impact on test performance. More recently, researchers discovered that the color red causes people to react with greater speed and force, something that might prove useful during athletic activities.

**The Color Psychology of Black**

- **Black** absorbs all light in the color spectrum.
- Black is often used as a symbol of menace or evil, but it is also popular as an indicator of power. It is used to represent treacherous characters such as Dracula and is often associated with witchcraft.
- Black is associated with death and mourning in many cultures. It is also associated with unhappiness, sexuality, formality, and sophistication.
- In ancient Egypt, black represented life and rebirth.
- Black is often used in fashion because of its slimming quality.
- Consider how black is used in language: Black Death, blackout, black cat, black list, black market, black tie, black belt.
The Color Psychology of White

- White represents purity or innocence.
- White is bright and can create a sense of space or add highlights.
- White is also described as cold, bland, and sterile. Rooms painted completely white can seem spacious, but empty and unfriendly. Hospitals and hospital workers use white to create a sense of sterility.

Red

- Red is a bright, warm color that evokes strong emotions.
- Red is associated with love, warmth, and comfort.
- Red is also considered an intense, or even angry, color that creates feelings of excitement or intensity.
- Consider how red is used in language: redneck, red-hot, red-handed, paint the town red, seeing red.

The Color Psychology of Blue

- Blue is described as a favorite color by many people and is the color most preferred by men.
- Blue calls to mind feelings of calmness or serenity. It is often described as peaceful, tranquil, secure, and orderly.
- Blue can also create feelings of sadness or aloofness.
- Blue is often used to decorate offices because research has shown that people are more productive in blue rooms.
- Blue is one of the most popular colors, but it is one of the least appetizing. Some weight loss plans even recommend eating your food off of a blue plate. Blue rarely occurs naturally in food aside from blueberries and some plums. Also, humans are geared to avoid foods that are poisonous and blue coloring in food is often a sign of spoilage or poison.
- Blue can also lower the pulse rate and body temperature.
- Consider how blue is used in language: blue moon, blue Monday, blue blood, the blues, and blue ribbon.

The Color Psychology of Green

- Green is a cool color that symbolizes nature and the natural world.
- Green also represents tranquility, good luck, health, and jealousy.
Researchers have also found that green can **improve reading ability**. Some students may find that laying a transparent sheet of green paper over reading material increases reading speed and comprehension.

- Green has long been a **symbol of fertility** and was once the preferred color choice for wedding gowns in the 15th-century. Even today, green M & M’s (an American chocolate candy) are said to send a sexual message.
- Green is often used in decorating for its **calming effect**. For example, guests waiting to appear on television programs often wait in a “green room” to relax.
- Green is thought to **relieve stress** and help heal. Those who have a green work environment experience fewer stomachaches.
- Consider how green is used in **language**; green thumb, green with envy, greenhorn.

**The Color Psychology of Yellow**

- Yellow is a bright that is often described as **cheery and warm**.
- Yellow is also the **most fatiguing to the eye** due to the high amount of light that is reflected. Using yellow as a background on paper or computer monitors can lead to eyestrain or vision loss in extreme cases.
- Yellow can also create **feelings of frustration and anger**. While it is considered a cheerful color, people are more likely to lose their tempers in yellow rooms and babies tend to cry more in yellow rooms.
- Yellow can also **increase the metabolism**.
- Since yellow is the most visible color, it is also the **most attention-getting color**. Yellow can be used in small amount to draw notice, such as on traffic signs or advertisements.

**The Color Psychology of Purple**

- Purple is the symbol of **royalty and wealth**.
- Purple also represents **wisdom and spirituality**.
- Purple does not often occur in nature, it can sometimes appear **exotic or artificial**.

**Color Psychology – Reactions to Brown**

- Brown is a natural color that evokes a sense of strength and reliability.
- Brown can also create feelings of sadness and isolation.
Brown brings to mind feeling of warmth, comfort, and security. It is often described as natural, down-to-earth, and conventional, but brown can also be sophisticated.

The Color Psychology of Orange
- Orange is a combination of yellow and red and is considered an energetic color.
- Orange calls to mind feelings of excitement, enthusiasm, and warmth.
- Orange is often used to draw attention, such as in traffic signs and advertising.

The Color Psychology of Pink
- Pink is essentially a light red and is usually associated with love and romance.
- Pink is thought to have a calming effect. One shade known as “drunk-tank pink” is sometimes used in prisons to calm inmates. Sports teams sometimes paint the opposing teams locker room pink to keep the players passive and less energetic.
- While pink’s calming effect has been demonstrated, researchers of color psychology have found that this effect only occurs during the initial exposure to the color. When used in prisons, inmates often become even more agitated once they become accustomed to the color.

1. **Match the terms with the definitions**

<table>
<thead>
<tr>
<th>Color</th>
<th>the distance from one wave of energy to another as it is traveling from one point to another point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyestrain</td>
<td>The quality of an object or substance with respect to light reflected by the object, usually determined visually by measurement of hue, saturation, and brightness of the reflected light</td>
</tr>
<tr>
<td>Wavelength</td>
<td>the group of colors that a ray of light can be separated into including red, orange, yellow, green, blue, indigo, and violet: the colors that can be seen in a rainbow</td>
</tr>
<tr>
<td>Chromotherapy</td>
<td>a strong feeling that makes you want to hurt someone or be unpleasant because of something unfair or unkind that has happened</td>
</tr>
<tr>
<td>Spectrum</td>
<td>A sensation of discomfort produced in the eyes by their excessive or improper use</td>
</tr>
<tr>
<td>Anger</td>
<td>treatment of disease by colored lights</td>
</tr>
<tr>
<td>Sadness</td>
<td>A particular state of mind or emotion</td>
</tr>
<tr>
<td>mood</td>
<td>emotional pain associated with, or characterized by feelings of disadvantage, loss, despair, helplessness, disappointment and sorrow</td>
</tr>
</tbody>
</table>
2. Say if these statements are true or false

<table>
<thead>
<tr>
<th>Statement</th>
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<th>false</th>
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Build word partnerships

<table>
<thead>
<tr>
<th>Color</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>hot, list, thumb</td>
</tr>
<tr>
<td>Blue</td>
<td>Monday, neck, market</td>
</tr>
<tr>
<td>Green</td>
<td>horn, blood</td>
</tr>
<tr>
<td>Red</td>
<td></td>
</tr>
</tbody>
</table>
What is Perception?

The perceptual process allows us to experience the world around us. Take a moment to think of all the things you perceive on a daily basis. At any given moment, you might see familiar objects in your environment, feel the touch of objects and people against your skin, smell the aroma of a home-cooked meal and hear the sound of music playing in your next door neighbor’s apartment. All of these things help make up our conscious experience and allow us to interact with the people and objects around us.

Perception is our sensory experience of the world around us and involves both the recognition of environmental stimuli and actions in response to these stimuli. Through the perceptual process, we gain information about properties and elements of the environment that are critical to our survival. Perception not only creates our experience of the world around us; it allows us to act within our environment.

Perception includes the five senses; touch, sight, hearing, smell and taste. It also includes what is known as proprioception, a set of senses involving the ability to detect changes in body positions and movements. It also involves the cognitive processes required to process information, such as recognizing the face of a friend or detecting a familiar scent.

The Perceptual Process

The perceptual process is a sequence of steps that begins with the environment and leads to our perception of a stimulus and an action in response to the stimulus. This process is continual, but you do not spend a great deal of time thinking about the actual process that occurs when you perceive the many stimuli that surround you at any given moment.

The process of transforming the light that falls on your retinas into an actual visual image happens unconsciously and automatically. The subtle changes in pressure against your skin that allow you to feel object occur without a single thought.

In order to fully understand how the perception process works, we’ll start by breaking down each step.
The Steps in the Perceptual Process

1. The Environmental Stimulus
2. The Attended Stimulus
3. The Image on the Retina
4. Transduction
5. Neural Processing
6. Perception
7. Recognition
8. Action

The Environmental Stimulus

The world is full of stimuli that can attract our attention through various senses. The environmental stimulus is everything in our environment that has the potential to be perceived. This might include anything that can be seen, touched, tasted, smelled or heard. It might also involve the sense of proprioception, such as the movements of the arms and legs or the change in position of the body in relation to objects in the environment.

The Attended Stimulus

The attended stimulus is the specific object in the environment on which our attention is focused. In many cases, we might focus on stimuli that are familiar to us, such as the face of a friend in a crowd of strangers at the local coffee shop. In other instances, we are likely to attend to stimuli that have some degree of novelty.

The Image on the Retina

Next, the attended stimulus is formed as an image on the retina. The first part of this process involves the light actually passing through the cornea and pupil and onto the lens of the eye. The cornea helps focus the light as it enters the eye, and the iris of the eye controls the size of the pupils in order to determine how much light to let in. The cornea and lens act together to project an inverted image on the retina.

Transduction

The image on the retina is then transformed into electrical signals in a process known as transduction. This allows the visual messages to be transmitted to the brain to be interpreted.

Neural Processing

The electrical signals then undergo neural processing. The path followed by a particular signal depends on what type of signal it is (i.e. an auditory signal or
a visual signal). Through the series of interconnect neurons located throughout the body, electrical signals are propagated from the receptors cells to the brain. In the next step of the perceptual process, you will actually perceive the stimuli and become aware of its presence in the environment.

**Perception**

In the next step of the perception process, we actually perceive the stimulus object in the environment. It is at this point that we become consciously aware of the stimulus.

**Recognition**

Perception doesn’t just involve becoming consciously aware of the stimuli. It is also necessary for our brain to categorize and interpret what it is we are sensing. Our ability to interpret and give meaning to the object is the next step, known as **recognition**.

**Action**

The final step of the perceptual process involves some sort of **action** in response to the environmental stimulus. This could involve a variety of actions, such as turning your head for a closer look or turning away to look at something else.

The action phase of perceptual development involves some type of motor action that occurs in response to the perceived and recognized stimulus. This might involve a major action, like running toward a person in distress, or something as subtle as blinking your eyes in response to a puff of dust blowing through the air.

**Answer the questions**

1. What is perception?
2. How many steps are there in the perceptual process?
3. What are the main steps in the perceptual process?
4. What is proprioception?
5. What senses are included in perception?
6. Does perception involve cognitive processes?
7. What is transduction?
8. Is the process of transforming the light into an actual visual image conscious or unconscious?
9. How much time does the perceptual process take?
10. What are the main functions of perception?
1. **Match the word partnerships**

<table>
<thead>
<tr>
<th>Process</th>
<th>Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>experience</td>
</tr>
<tr>
<td>attract</td>
<td>the touch</td>
</tr>
<tr>
<td>turn</td>
<td>the aroma</td>
</tr>
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<td>perceive</td>
<td>Stimuli</td>
</tr>
<tr>
<td>transmit</td>
<td>Attention</td>
</tr>
<tr>
<td>smell</td>
<td>information</td>
</tr>
<tr>
<td>detect</td>
<td>A message</td>
</tr>
<tr>
<td>Feel</td>
<td>Changes</td>
</tr>
</tbody>
</table>

2. **Fill in the gaps with gerunds or infinitives**

1. This might involve a major action, like *(to run)* toward a person in distress, or something as subtle as *(to blink)* your eyes in response to a puff of dust blowing through the air.

2. Perception doesn’t just involve *(to become)* consciously aware of the stimuli.

3. This could involve a variety of actions, such as *(to turn)* your head for a closer look or *(to turn)* away to look at something else.

4. It also involves the cognitive processes required *(to process)* information, such as *(to recognize)* the face of a friend or *(to detect)* a familiar scent.

5. The process of *(to transform)* the light that falls on your retinas into an actual visual image happens unconsciously and automatically.

6. We are likely *(to attend)* to stimuli that have some degree of novelty.

7. In order to fully *(understand)* how the perception process works, we’ll start by *(to break down)* each step.

8. Perception not only creates our experience of the world around us; it allows us *(to act)* within our environment.

3. **Match the beginnings and the endings of the sentences**

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Memory

Have you ever wondered how you manage to remember information for a test? The ability to create new memories, store them for periods of time and recall them when they are needed allows us to learn and interact with the world around us. The study of human memory has been a subject of science and philosophy for thousands of years and has become one of the major topics of interest within cognitive psychology. But what exactly is memory? How are memories formed?

What is Memory?

Memory refers to the processes that are used to acquire, store, retain and later retrieve information. There are three major processes involved in memory: encoding, storage and retrieval.

In order to form new memories, information must be changed into a usable form, which occurs through the process known as encoding. Once information has been successfully encoded, it must be stored in memory for later use. Much of this stored memory lies outside of our awareness most of the time, except when we actually need to use it. The retrieval process allows us to bring stored memories into conscious awareness.

The Stage Model of Memory

While several different models of memory have been proposed, the stage model of memory is often used to explain the basic structure and function of memory. Initially proposed in 1968 by Atkinson and Shiffrin, this theory outlines three separate stages of memory: sensory memory, short-term memory and long-term memory.

- Sensory Memory

Sensory memory is the earliest stage of memory. During this stage, sensory information from the environment is stored for a very brief period of time, generally for no longer than a half-second for visual information and 3 or 4 seconds for auditory information. We attend to only certain aspects of this sensory memory, allowing some of this information to pass into the next stage – short-term memory.
- **Short-Term Memory**

  Short-term memory, also known as active memory, is the information we are currently aware of or thinking about. In Freudian psychology, this memory would be referred to as the conscious mind. Paying attention to sensory memories generates the information in short-term memory. Most of the information stored in active memory will be kept for approximately 20 to 30 seconds. While many of our short-term memories are quickly forgotten, attending to this information allows it to continue on the next stage – long-term memory.

- **Long-Term Memory**

  Long-term memory refers to the continuing storage of information. In Freudian psychology, long-term memory would be call the preconscious and unconscious. This information is largely outside of our awareness, but can be called into working memory to be used when needed. Some of this information is fairly easy to recall, while other memories are much more difficult to access.

- **The Organization of Memory**

  The ability to access and retrieve information from long-term memory allows us to actually use these memories to make decisions, interact with others and solve problems. But how is information organized in memory? The specific way information is organized in long-term memory is not well understood, but researchers do know that these memories are arranged in groups.

  **Clustering** is used to organize related information into groups. Information that is categorized becomes easier to remember and recall. For example, consider the following group of words:

  Desk, apple, bookshelf, red, plum, table, green, pineapple, purple, chair, peach, yellow

  Spend a few seconds reading them, then look away and try to recall and list these words. How did you group the words when you listed them? Most people will list using three different categories: color, furniture and fruit.

  One way of thinking about memory organization is known as the **semantic network model**. This model suggests that certain triggers activate associated memories. A memory of a specific place might activate memories about related things that have occurred in that location. For example, thinking about a particular campus building might trigger memories of attending classes, studying and socializing with peers.
Explanations for Forgetting

Reasons Why We Forget

What are some of the major reasons why we forget information? One of today’s best known memory researchers, Elizabeth Loftus, has identified four major reasons why people forget: retrieval failure, interference, failure to store and motivated forgetting.

1. Retrieval Failure

Have you ever felt like a piece of information has just vanished from memory? Or maybe you know that it’s there, you just can’t seem to find it. The inability to retrieve a memory is one of the most common causes of forgetting.

So why are we often unable to retrieve information from memory. One possible explanation of retrieval failure is known as decay theory. According to this theory, a memory trace is created every time. Decay theory suggests that over time, these memory traces begin to fade and disappear. If information is not retrieved and rehearsed, it will eventually be lost.

One problem with this theory, however, is that research has demonstrated that even memories which have not been rehearsed or remembered are remarkably stable in long-term memory.

2. Interference

Another theory known as interference theory suggests that some memories compete and interfere with other memories. When information is very similar to other information that was previously stored in memory, interference is more likely to occur.

There are two basic types of interference:

- **Proactive interference** is when an old memory makes it more difficult or impossible to remember a new memory.

- **Retroactive interference** occurs when new information interferes with your ability to remember previously learned information.

3. Failure to Store

Sometimes, losing information has less to do with forgetting and more to do with the fact that it never made it into long-term memory in the first place. **Encoding failures** sometimes prevent information from entering long-term memory.
In one well-known experiment, researchers asked participants to identify the correct U.S. penny out of a group of incorrect pennies (Nickerson & Adams). Try doing this experiment yourself by attempting to draw a penny from memory, and then compare your results to an actual penny.

How well did you do? Chances are that you were able to remember the shape and color, but you probably forgot other minor details. The reason for this is that only details necessary for distinguishing pennies from other coins were encoded into your long-term memory.

4. Motivated Forgetting

Sometimes, we may actively work to forget memories, especially those of traumatic or disturbing events or experiences. The two basic forms of motivated forgetting are: suppression, a conscious form of forgetting, and repression, an unconscious form of forgetting.

However, the concept of repressed memories is not universally accepted by all psychologists. One of the problems with repressed memories is that it is difficult, if not impossible, to scientifically study whether or not a memory has been repressed. Also note that mental activities such as rehearsal and remembering are important ways of strengthening a memory, and memories of painful or traumatic life events are far less likely to be remembered, discussed or rehearsed.

1. Match the terms with their definitions

<table>
<thead>
<tr>
<th>Memory</th>
<th>the action or method of storing something for future use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieval</td>
<td>bring (a fact, event, or situation) back into one’s mind; remember</td>
</tr>
<tr>
<td>Storage</td>
<td>the process of breaking the information down into a form we understand</td>
</tr>
<tr>
<td>Encoding</td>
<td>organizing information in memory into related groups</td>
</tr>
<tr>
<td>Awareness</td>
<td>the faculty by which the mind stores and remembers information</td>
</tr>
<tr>
<td>To recall</td>
<td>a practice or trial performance of a play or other work for later public performance</td>
</tr>
<tr>
<td>clustering</td>
<td>the action of interfering or the process of being interfered with</td>
</tr>
<tr>
<td>interference</td>
<td>the process of getting something back from somewhere</td>
</tr>
<tr>
<td>decay theory</td>
<td>knowledge or perception of a situation or fact</td>
</tr>
<tr>
<td>rehearsal</td>
<td>theory which states that forgetting occurs as a result of the automatic decay or fading of the memory trace</td>
</tr>
</tbody>
</table>
### 2. Say if these statements are true or false

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
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</tbody>
</table>

### 3. Match the words to build word partnerships

<table>
<thead>
<tr>
<th>Word 1</th>
<th>Word 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>To solve</td>
<td>memory</td>
</tr>
<tr>
<td>cognitive</td>
<td>information</td>
</tr>
<tr>
<td>sensory</td>
<td>In groups</td>
</tr>
<tr>
<td>To trigger</td>
<td>problems</td>
</tr>
<tr>
<td>To retrieve</td>
<td>forgetting</td>
</tr>
<tr>
<td>proactive</td>
<td>psychology</td>
</tr>
<tr>
<td>To arrange</td>
<td>interference</td>
</tr>
<tr>
<td>motivated</td>
<td>memories</td>
</tr>
</tbody>
</table>
Top 10 Memory Improvement Tips

Before you study for your next exam, you might want to use a few strategies to boost your memory of important information. There are a number of tried and tested techniques for improving memory. These strategies have been established within cognitive psychology literature and offer a number of great ways to improve memory, enhance recall and increase retention of information.

1. **Focus your attention on the materials you are studying.**

   Attention is one of the major components of memory. In order for information to move from short-term memory into long-term memory, you need to actively attend to this information. Try to study in a place free of distractions such as television, music and other diversions.

2. **Avoid cramming by establishing regular study sessions.**

   According to Bjork (2001), studying materials over a number of session’s gives you the time you need to adequately process the information. Research has shown that students who study regularly remember the material far better than those who did all of their studying in one marathon session.

3. **Structure and organize the information you are studying.**

   Researchers have found that information is organized in memory in related clusters. You can take advantage of this by structuring and organizing the materials you are studying. Try grouping similar concepts and terms together, or make an outline of your notes and textbook readings to help group related concepts.

4. **Utilize mnemonic devices to remember information.**

   Mnemonic devices are a technique often used by students to aid in recall. A mnemonic is simply a way to remember information. For example, you might associate a term you need to remember with a common item that you are very familiar with. The best mnemonics are those that utilize positive imagery, humor or novelty. You might come up with a rhyme, song or joke to help remember a specific segment of information.

5. **Elaborate and rehearse the information you are studying.**

   In order to recall information, you need to encode what you are studying into long-term memory. One of the most effective encoding techniques is known as...
elaborative rehearsal. An example of this technique would be to read the definition of a key term, study the definition of that term and then read a more detailed description of what that term means. After repeating this process a few times, your recall of the information will be far better.

6. Relate new information to things you already know.

When you are studying unfamiliar material, take the time to think about how this information relates to things that you already know. By establishing relationships between new ideas and previously existing memories, you can dramatically increase the likelihood of recalling the recently learned information.

7. Visualize concepts to improve memory and recall.

Many people benefit greatly from visualizing the information they study. Pay attention to the photographs, charts and other graphics in your textbooks. If you do not have visual cues to help, try creating your own. Draw charts or figures in the margins of your notes or use highlighters or pens in different colors to group related ideas in your written study materials.

8. Teach new concepts to another person.

Research suggests that reading materials out loud significantly improves memory of the material. Educators and psychologists have also discovered that having students actually teach new concepts to others enhances understanding and recall. You can use this approach in your own studies by teaching new concepts and information to a friend or study partner.

9. Pay extra attention to difficult information.

Have you ever noticed how it’s sometimes easier to remember information at the beginning or end of a chapter? Researchers have found that the order of information can play a role in recall, which is known as the serial position effect. While recalling middle information can be difficult, you can overcome this problem by spending extra time rehearsing this information. Another strategy is to try restructuring the information so it will be easier to remember. When you come across an especially difficult concept, devote some extra time to memorizing the information.

10. Vary your study routine.

Another great way to increase your recall is to occasionally change your study routine. If you are accustomed to studying in one specific location, try moving to a different spot during your next study session. If you study in the evening, try spending a few minutes each morning reviewing the information you
studied the previous night. By adding an element of novelty to your study sessions, you can increase the effectiveness of your efforts and significantly improve your long-term recall.

**Facts About Memory**

**Being Tested On Information Actually Helps You Remember It Better**

While it may seem like studying and rehearsing information is the best way to ensure that you will remember it, researchers have found that being tested on information is actually one of the best ways to improve recall.

One experiment found that students who studied and were then tested had better long-term recall of the materials, even on information that was not covered by the tests. Students who had extra time to study but were not tested had significantly lower recall of the materials.

**Depictions of Amnesia in Movies Are Usually Inaccurate**

Amnesia is a common plot device in the movies, but these depictions are often inaccurate. For example, how often have you seen a fictional character lose their memory due to a bump on the head only to have their memories magically restored after suffering a second knock to the skull?

There are two different types of amnesia:

- **Anterograde amnesia**: Involves the loss of the ability to form new memories.
- **Retrograde amnesia**: Involves losing the ability to recollect past memories, although the ability to create new memories may remain intact.

While most movie depictions of amnesia involve retrograde amnesia, anterograde amnesia is actually far more common. The most famous case of anterograde amnesia was a patient known in the literature as H.M. In 1953, he had brain surgery to help stop the seizures caused by his severe epilepsy. The surgery involved the removal of both hippocampi, the regions of the brain strongly associated with memory. As a result, H.M. was no longer able to form any new long-term memories.

Popular movies and television programs tend to depict such memory loss as fairly common, but true cases of complete amnesia about one’s past and identity are actually quite rare.

Some of the most common causes of amnesia include:

- **Trauma**: A physical trauma, such as a car accident, can cause the victim to lose specific memories of the event itself. Emotional trauma, such as being
a victim of childhood sexual abuse, can cause the individual to lose memories of specific situations.

- **Drugs:** Certain medications can be used to cause temporary amnesia, particularly during medical procedures. Once the drugs wear off, the individual’s memory returns to normal functioning.

**A Good Night’s Sleep May Improve Your Memory**

You have probably heard about many of the reasons to get a good night’s sleep. Since the 1960s, researchers have noted the important connection between sleep and memory. In one classic experiment conducted in 1994, researchers found that depriving participants of sleep impaired their ability to improve performance on a line identification task.

In addition to aiding in memory, sleep also plays and essential role in learning new information. In one study, researchers found that depriving students of sleep after learning a new skill significantly decreased memory of that skill up to three days later.

Researchers have found, however, that sleep’s influence on procedural memory is much stronger than it is for declarative memory. Procedural memories are those that involve motor and perceptual skills, while declarative memories are those that involve the memorization of facts.

“If you’re going to be tested on 72 irregular French verbs tomorrow, you might as well stay up late and cram”, explained Robert Stickgold, a psychiatry professor at Harvard Medical School, in an article published in the APA’s *Monitor on Psychology*. “But if they’re going to throw a curveball at you and ask you to explain the differences between the French Revolution and the Industrial Revolution, you’re better off having gotten some sleep”.
Understanding Theories of Intelligence

While intelligence is one of the most talked about subjects within psychology, there is no standard definition of what exactly constitutes ‘intelligence.’ Some researchers have suggested that intelligence is a single, general ability, while other believe that intelligence encompasses a range of aptitudes, skills and talents. The following are some of the major theories of intelligence that have emerged during the last 100 years.

Charles Spearman – General Intelligence:

British psychologist Charles Spearman (1863–1945) described a concept he referred to as general intelligence, or the g factor. After using a technique known as factor analysis to examine a number of mental aptitude tests, Spearman concluded that scores on these tests were remarkably similar. People who performed well on one cognitive test tended to perform well on other tests, while those who scored badly on one test tended to score badly on others. He concluded that intelligence is general cognitive ability that could be measured and numerically expressed.

Louis L. Thurstone – Primary Mental Abilities:

Psychologist Louis L. Thurstone (1887–1955) offered a different theory of intelligence. Instead of viewing intelligence as a single, general ability, Thurstone’s theory focused on seven different “primary mental abilities”. The abilities that he described were:

- Verbal comprehension
- Reasoning
- Perceptual speed
- Numerical ability
- Word fluency
- Associative memory
- Spatial visualization

Howard Gardner – Multiple Intelligences:

One of the more recent ideas to emerge is Howard Gardner’s theory of multiple intelligences. Instead of focusing on the analysis of test scores, Gardner proposed that numerical expressions of human intelligence are not a full and accurate depiction of people’s abilities. His theory describes eight distinct intelligences that are based on skills and abilities that are valued within different cultures.
The eight intelligences Gardner described are:
- Visual-spatial Intelligence
- Verbal-linguistic Intelligence
- Bodily-kinesthetic Intelligence
- Logical-mathematical Intelligence
- Interpersonal Intelligence
- Musical Intelligence
- Intra personal Intelligence
- Naturalistic Intelligence

Robert Sternberg – Triarchic Theory of Intelligence:
Psychologist Robert Sternberg defined intelligence as “mental activity directed toward purposive adaptation to, selection and shaping of, real-world environments relevant to one’s life”. While he agreed with Gardner that intelligence is much broader than a single, general ability, he instead suggested some of Gardner’s intelligences are better viewed as individual talents.

Sternberg proposed what he refers to as ‘successful intelligence,’ which is comprised of three different factors:
- Analytical intelligence: This component refers to problem-solving abilities.
- Creative intelligence: This aspect of intelligence involves the ability to deal with new situations using past experiences and current skills.
- Practical intelligence: This element refers to the ability to adapt to a changing environment.

What Factors Determine Intelligence?
In addition to disagreements about the basic nature of intelligence, psychologists have spent a great amount of time and energy debating the various influences on individual intelligence. The debate focuses on one of the major questions in psychology: Which is more important - nature or nurture?

Today, nearly all psychologists recognize that both genetics and the environment play a role in determining intelligence. It now becomes matter of determining exactly how much of an influence each factor has.

First, it is important to note that genetics and the environment interact to determine exactly how inherited genes are expressed. For example, if a person has tall parents, it is likely that the individual will also grow to be tall. However, the
exact height the person reaches can be influenced by environmental factors such as nutrition and disease.

Evidence of genetic influences:

- Twin studies suggest that identical twins IQ’s are more similar than those of fraternal twins (Promin & Spinath, 2004).
- Siblings reared together in the same home have IQ’s that are more similar than those of adopted children raised together in the same environment (McGue & others, 1993).

Evidence of environmental influences:

- Identical twins reared apart have IQ’s that are less similar than identical twins reared in the same environment (McGue & others, 1993).
- School attendance has an impact on IQ scores (Ceci, 2001).
- Children who are breastfed during the first three to five months of life score higher on IQ tests at age 6 than same-age children who were not breastfed (Reinberg, 2008).
History of Intelligence Testing

The History and Development of Modern IQ Testing

Interest in intelligence dates back thousands of years, but it wasn’t until psychologist Alfred Binet was commissioned to identify students who needed educational assistance that the first IQ test was born.

Alfred Binet and the First IQ Test

During the early 1900s, the French government asked psychologist Alfred Binet to help decide which students were mostly likely to experience difficulty in schools. The government had passed laws requiring that all French children attend school, so it was important to find a way to identify children who would need specialized assistance.

Faced with this task, Binet and his colleague Theodore Simon began developing a number of questions that focused on things that had not been taught in school such as attention, memory and problem-solving skills. Using these questions, Binet determined which ones served as the best predictors of school success. He quickly realized that some children were able to answer more advanced questions that older children were generally able to answer, while other children of the same age were only able to answer questions that younger children could typically answer. Based on this observation, Binet suggested the concept of a mental age, or a measure of intelligence based on the average abilities of children of a certain age group.

This first intelligence test, referred to today as the Binet-Simon Scale, became the basis for the intelligence tests still in use today. However, Binet himself did not believe that his psychometric instruments could be used to measure a single, permanent and inborn level of intelligence. Binet stressed the limitations of the test, suggesting that intelligence is far too broad a concept to quantify with a single number. Instead, he insisted that intelligence is influenced by a number of factors, changes over time and can only be compared among children with similar backgrounds.

The Stanford-Binet Intelligence Test

After the development of the Binet-Simon Scale, the test was soon brought to the United States where it generated considerable interest. Stanford University
psychologist Lewis Terman took Binet’s original test and standardized it using a sample of American participants. This adapted test, first published in 1916, was called the Stanford-Binet Intelligence Scale and soon became the standard intelligence test used in the U.S.

The Stanford-Binet intelligence test used a single number, known as the intelligence quotient (or IQ), to represent an individual’s score on the test. This score was calculated by dividing the test taker’s mental age by their chronological age, and then multiplying this number by 100. For example, a child with a mental age of 12 and a chronological age of 10 would have an IQ of 120 (12 /10×100).

The Stanford-Binet remains a popular assessment tool today, despite going through a number of revisions over the years since its inception.

**Intelligence Testing During World War I**

At the outset of World War I, U.S. Army officials were faced with the monumental task of screening an enormous number of army recruits. In 1917, as president of the APA and chair of the Committee on the Psychological Examination of Recruits, psychologist Robert Yerkes developed two tests known as the Army Alpha and Beta tests. The Army Alpha was designed as a written test, while the Army Beta was administered orally in cases where recruits were unable to read. The tests were administered to over two million soldiers in an effort to help the army determine which men were well suited to specific positions and leadership roles.

At the end of WWI, the tests remained in use in a wide variety of situations outside of the military with individuals of all ages, backgrounds and nationalities. For example, IQ tests were used to screen new immigrants as they entered the United States at Ellis Island. The results of these mental tests were inappropriately used to make sweeping and inaccurate generalizations about entire populations, which led some intelligence “experts” to exhort Congress to enact immigration restrictions.

**The Wechsler Intelligence Scales**

The next development in the history of intelligence testing was the creation of a new measurement instrument by American psychologist David Wechsler. Much like Binet, Wechsler believed that intelligence involved a number of different mental abilities, describing intelligence as, “the global capacity of a person to act purposefully, to think rationally, and to deal effectively with his environment”
Dissatisfied with the limitations of the Stanford-Binet, he published his new intelligence test known as the Wechsler Adult Intelligence Scale (WAIS) in 1955.

Wechsler also developed two different tests specifically for use with children: the Wechsler Intelligence Scale for Children (WISC) and the Wechsler Preschool and Primary Scale of Intelligence (WPPSI). The adult version of the test has been revised since its original publication and is now known as the WAIS-III.

The WAIS-III contains 14 subtests on two scales and provides three scores: a composite IQ score, a verbal IQ score and a performance IQ score. Subtest scores on the WAIS-III can be useful in identifying learning disabilities, such as cases where a low score on some areas combined with a high score in other areas may indicate that the individual has a specific learning difficulty.

Rather than score the test based on chronological age and mental age, as was the case with the original Stanford-Binet, the WAIS is scored by comparing the test taker’s score to the scores of others in the same age group. The average score is fixed at 100, with two-thirds of scores lying in the normal range between 85 and 115. This scoring method has become the standard technique in intelligence testing and is also used in the modern revision of the Stanford-Binet test.

What Is a Genius IQ Score?

When people talk about intelligence tests, they often discuss “genius scores”. What exactly constitutes a genius score on a measure of intelligence? In order to understand the score, it is important to first learn a little bit more about IQ testing in general.

Today’s intelligence tests are based largely on the original test devised in the early 1900’s by French psychologist Alfred Binet. In order to identify students in need of extra assistance in school, the French government asked Binet to devise a test that could be used to discover which students most needed academic help.

Based on his research, Binet developed the concept of mental age. Certain questions he posed were easily answered by children of certain age groups. Some children were able to answer questions that were typically answered by children of an older age – these children had a higher mental age than their actual chronological age. Binet’s measure of intelligence was based on the average abilities of children of a particular age group.
Understanding IQ Scores

IQ scores generally follow what is known as the Bell Curve. In order to understand what the score on an IQ test means, there are a few key terms that you should know:

- **Bell Curve**: When IQ scores are plotted on a graph, they typically follow a bell-shaped curve. The peak of the “bell” occurs where the majority of the scores lie. The bell then slopes downward to each side – one side representing scores that are lower than the average, the other side representing scores that are above the average. An example of a bell curve can be seen in the image above.

- **Mean**: The average score. The average is calculated by adding all of the scores together, then dividing by the total number of scores.

- **Standard Deviation**: A measure of variability in a population. A low standard deviation means that most of the data points are very close to the same value. A high standard deviation indicates that the data points tend to be very spread out from the average. In IQ testing, the standard deviation is plus or minus 15.

A Breakdown of IQ Scores

Now that you understand these key terms, we can talk a bit more about how we interpret IQ scores. The average score on an IQ test is 100. Sixty-eight percent of IQ scores fall within one standard deviation of the mean. So that means that the majority of people have an IQ score between 85 and 115.

- 1 to 24 – Profound mental disability
- 25 to 39 – Severe mental disability
- 40 to 54 – Moderate mental disability
- 55 to 69 – Mild mental disability
- 70 to 84 – Borderline mental disability
- 85 to 114 – Average intelligence
- 115 to 129 – Above average; bright
- 130 to 144 – Moderately gifted
- 145 to 159 – Highly gifted
- 160 to 179 – Exceptionally gifted
- 180 and up – Profoundly gifted

Genius IQ Scores

So what is considered a genius IQ score? Generally, any score over 140 is counted as a high IQ. A score over 160 is considered by many to be a genius IQ score. Scores that are 200 and over are often referred to as “unmeasurable genius”.
Attention

Attention is a concept studied in cognitive psychology that refers to how we actively process specific information present in our environment. As you are reading this, there are numerous sights, sounds and sensations going on around you – the pressure of your feet against the floor, the sight of the street out of a nearby window, the soft warmth of your shirt, the memory of a conversation you had earlier with a friend. How do we manage to experience all of these sensations and still focus on just one element of our environment?

According to psychologist and philosopher William James, attention “is the taking possession of the mind, in clear and vivid form, of one out of what may seem several simultaneously possible objects or trains of thoughts…It implies withdrawal from some things in order to deal effectively with others”.

Think of attention as a highlighter. As you read through a section of text in a book, the highlighted section stands out, causing you to focus your interest on that area. Attention allows you to “tune out” information, sensations and perceptions that are not relevant at the moment and instead focus your energy on the information that is important.

Selective Attention

In cognitive psychology there are at least two models which describe how visual attention operates. Generally speaking, visual attention is thought to operate as a two-stage process. In the first stage, attention is distributed uniformly over the external visual scene and processing of information is performed in parallel. In the second stage, attention is concentrated to a specific area of the visual scene (i.e. it is focused), and processing is performed in a serial fashion.

The first of these models to appear in the literature is the spotlight model. The term “spotlight” was inspired by the work of William James who described attention as having a focus, a margin, and a fringe. The focus is an area that extracts information from the visual scene with a high-resolution, the geometric center where visual attention is directed. Surrounding the focus is the fringe of attention which extracts information in a much more crude fashion (i.e. low-resolution). This fringe extends out to a specified area and this cut-off is called the margin.
The second model is called the zoom-lens model, and was first introduced in 1983. This model inherits all properties of the spotlight model (i.e. the focus, the fringe, and the margin) but has the added property of changing in size. This size-change mechanism was inspired by the zoom lens you might find on a camera, and any change in size can be described by a trade-off in the efficiency of processing. The zoom-lens of attention can be described in terms of an inverse trade-off between the size of focus and the efficiency of processing: because attentional resources are assumed to be fixed, then it follows that the larger the focus is, the slower processing will be of that region of the visual scene since this fixed resource will be distributed over a larger area. It is thought that the focus of attention can subtend a minimum of 1° of visual angle, however the maximum size has not yet been determined.

**Bottom-Up vs Top-Down**

Researchers have described two different aspects of how our minds come to attend to items present in the environment.

The first aspect is called bottom-up processing, also known as stimulus-driven attention or exogenous attention. These describe attentional processing which is driven by the properties of the objects themselves. Some processes, such as motion or a sudden loud noise, can attract our attention in a pre-conscious, or non-volitional way. We attend to them whether we want to or not. These aspects of attention are thought to involve parietal and temporal cortices, as well as the brainstem.

The second aspect is called top-down processing, also known as goal-driven, endogenous attention, attentional control or executive attention. This aspect of our attentional orienting is under the control of the person who is attending. It is mediated primarily by the frontal cortex and basal ganglia as one of the executive functions. Research has shown that it is related to other aspects of the executive functions, such as working memory and conflict resolution and inhibition.

**Overt and covert attention**

Attention may be differentiated according to its status as “overt” versus “covert”. Overt attention is the act of directing sense organs towards a stimulus source. Covert attention is the act of mentally focusing on one of several possible sensory stimuli. Covert attention is thought to be a neural process that enhances the signal from a particular part of the sensory panorama. (e.g. While reading,
shifting overt attention would amount to movement of eyes to read different words, but covert attention shift would occur when you shift your focus from semantic processing of word to the font or color of the word you are reading.)

There are studies that suggest the mechanisms of overt and covert attention may not be as separate as previously believed. Though humans and primates can look in one direction but attend in another, there may be an underlying neural circuitry that links shifts in covert attention to plans to shift gaze. For example, if individuals attend to the right hand corner field of view, movement of the eyes in that direction may have to be actively suppressed.

The current view is that visual covert attention is a mechanism for quickly scanning the field of view for interesting locations. This shift in covert attention is linked to eye movement circuitry that sets up a slower saccade to that location.

**Divided attention**

Dividing attention between two (or more) sources is very difficult. For instance, people can’t easily listen to two simultaneous audio streams or view two overlapping videos while detecting target events in each, especially when the two sources are spatially separated. Sometimes two aspects of a single object can be attended to successfully, but if the two aspects characterize two spatially separated objects performance is worse in divided attention conditions (Bonnel & Prinzmetal, 1998). It is also easier to divide attention between information streams in two different sensory modalities, such as vision and hearing, but if the task is more difficult than simply detecting occasional stimuli in those channels performance is still worse than if attending to only one channel (e.g., Bonnel & Hafter, 1998). When the task is more difficult, only if the task in one modality, say typing by an expert typist, can be performed *automatically* can attention be divided without a performance decrement, and then only if the response modalities are similarly different (e.g., expert typist typing a text – visual/manual while making a verbal response whenever they hear their name in an auditory channel – auditory/verbal).
Multitasking

Take a moment and think about all of the things you are doing right now – obviously you are reading this article, but chances are good that you are also doing several things at once. Perhaps you’re also listening to music, texting a friend, checking your email in another browser tab or playing a computer game.

If you are doing several different things at once, then you may be what researchers refer to as a “heavy multitasker”. And you probably think that you are fairly good at this. According to a number of different studies, however, you are probably not as effective at multitasking as you think you are.

In the past, many people believed that multitasking was a good way to increase productivity. After all, if you’re working on several different tasks at once, you’re bound to accomplish more, right? Recent research, however, has demonstrated that that switching from one task to the next takes a serious toll on productivity. Multitaskers have more trouble tuning out distractions than people who focus on one task at a time. Also, doing so many different things at once can actually impair cognitive ability.

What the Research on Multitasking Suggests

First, let’s start by defining what we mean when we use the term *multitasking*. It can mean performing two or more tasks simultaneously, or it can also involve switching back and forth from one thing to another. Multitasking can also involve performing a number of tasks in rapid succession.

In order to determine the impact of multitasking, psychologists asked study participants to switch tasks and then measured how much time was lost by switching. In one study conducted by Robert Rogers and Stephen Monsell, participants were slower when they had to switch tasks than when they repeated the same task.

Another study conducted in 2001 by Joshua Rubinstein, Jeffrey Evans and David Meyer found that participants lost significant amounts of time as they switched between multiple tasks and lost even more time as the tasks became increasingly complex.
Understanding What the Multitasking Research Means

In the brain, multitasking is managed by what are known as mental executive functions. These executive functions control and manage other cognitive processes and determine how, when and in what order certain tasks are performed. According to researchers Meyer, Evans and Rubinstein, there are two stages to the executive control process. The first stage is known as “goal shifting” (deciding to do one thing instead of another) and the second is known as “rule activation” (changing from the rules for the previous task to rules for the new task).

Switching between these may only add a time cost of just a few tenths of a second, but this can start to add up when people begin switching back and forth repeatedly. This might not be that big in some cases, such as when you are folding laundry and watching television at the same time. However, if you are in a situation where safety or productivity are important, such as when you are driving a car in heavy traffic, even small amounts of time can prove critical.

Practical Applications for Multitasking Research

Meyer suggests that productivity can be reduced by as much as 40 percent by the mental blocks created when people switch tasks. Now you understand the potential detrimental impact of multitasking, you can put this knowledge to work to increase your productivity and efficiency.

Of course, the situation plays an important role. The costs of switching tasks while texting a friend and watching a football game probably are not going to cause any major problems. However, that fraction of a second it takes to change tasks could mean life or death for someone driving down the interstate while trying to find a good radio station or talking on the phone.

The next time you find yourself multitasking when you are trying to be productive, take a quick assessment of the various things you are trying to accomplish. Eliminate distractions and try to focus on one task at a time.

Can People Really Multitask?

The short answer to whether people can really multitask is no. Multitasking is a myth. The human brain can not perform two tasks that require high level brain function at once. Low level functions like breathing and pumping blood aren’t considered in multitasking, only tasks you have to “think” about. What
actually happens when you think you are multitasking is that you are rapidly switching between tasks.

The cerebral cortex handles the brain’s “executive controls”. Those are the controls that organize the brains tasks processing. The controls are divided into two stages.

The first is goal shifting. Goal shifting happens when you switch your focus from one task to another.

The second stage is rule activation. Rule activation turns off the rules (how the brain completes a given task) for the previous task and turns on the rules for the new task.

So when you think you are multitasking you are actually switching your goals and turning the respective rules on and off in rapid succession. The switches are fast (tenths of a second) so you may not notice them, but those delays and the loss of focus can add up.
**Why Do We Dream? – Top Dream Theories**

*“Dreams are the touchstones of our characters” – Henry David Thoreau*

Dreams have fascinated philosophers for thousands of years, but only recently have dreams been subjected to empirical research and concentrated scientific study. Chances are that you’ve often found yourself puzzling over the mysterious content of a dream, or perhaps you’ve wondered why you dream at all.

First, let’s start by answering a basic question – What is a dream? A dream can include any of the images, thoughts and emotions that are experienced during sleep. Dreams can be extraordinarily vivid or very vague; filled with joyful emotions or frightening imagery; focused and understandable or unclear and confusing.

Why do we dream? What purpose do dreams serve? While many theories have been proposed, no single consensus has emerged. Considering the enormous amount of time we spend in a dreaming state, the fact that researchers do not yet understand the purpose of dreams may seem baffling. However, it is important to consider that science is still unraveling the exact purpose and function of sleep itself.

Some researchers suggest that dreams serve no real purpose, while others believe that dreaming is essential to mental, emotional and physical well-being. Ernest Hoffman, director of the Sleep Disorders Center at Newton Wellesley Hospital in Boston, Mass., suggests that “...a possible (though certainly not proven) function of a dream to be weaving new material into the memory system in a way that both reduces emotional arousal and is adaptive in helping us cope with further trauma or stressful events”.

While dreams can vary considerably, sleep researcher J. Allan Hobson (1988) identified five basic characteristics of dreams:

**1. Dreams Often Feature Intense Emotions**

One of the major characteristics of dreams is that the emotions experienced in dreams can be intense, painful and acute. People commonly report dreaming about deeply embarrassing situations (i.e. being nude in public) or profoundly terrifying events (i.e. being chased by an attacker). In some instances, these emotions can become so intense that they interrupt the dream or cause the dreamer to wake abruptly. The three most common emotions that become intensified by dreams are anxiety, fear and surprise.
2. Dreams Are Frequently Disorganized and Illogical

Dreams are full of discontinuities, ambiguities and inconsistency, but sometimes these things can lead to downright bizarre dream content. According to Hobson, one of the hallmarks of dreams is “illogical content and organization, in which the unities of time, place and person do not apply, and natural laws are disobeyed”. Some examples of illogical dream content includes flying, time travel, talking animals, sudden transformations of both people and objects and sudden shifts in setting.

3. Strange Dream Content Is Accepted Without Question

The odd events and content that occur in dreams are typically accepted without question by the dreaming mind. According to Hobson, the unquestioning acceptance of dream content is due to the strength of our internally generated emotions and perceptions. Within the dream, these strange and illogical events, perceptions and objects are not seen as being out of place. If the dream is remembered upon waking, the content of the dream is seen as odd or even difficult to explain.

4. People Often Experience Bizarre Sensations

Strange sensory experiences are another cardinal characteristic of dreams. The sensation of falling, an inability to move quickly and being unable to control body movements are just a few of the commonly reported sensory experiences that occur during dreams.

5. Dreams Are Difficult to Remember

While memory seems to be intensified within the context of the dream, access to the information contained within the dream diminishes rapidly once the dreamer wakes. Dream researchers estimate that approximately 95% of all dreams are forgotten entirely upon awakening.

Understanding the Characteristics of Dreams

While many people may familiar with these five common characteristics of dreams, some may be unaware of just how common these experiences are. “Dream characteristics and dream object may be of an everyday nature or altogether fantastic and impossible collages of existing reality; they may behave normally or indulge in the most absurd, improbable or impossible actions in settings either familiar or bearing only the faintest resemblances to those of real life”, Hobson explains.
**Psychoanalytic Theory of Dreams:**

Consistent with the psychoanalytic perspective, Sigmund Freud’s theory of dreams suggested that dreams were a representation of unconscious desires, thoughts and motivations. According to Freud’s psychoanalytic view of personality, people are driven by aggressive and sexual instincts that are repressed from conscious awareness. While these thoughts are not consciously expressed, Freud suggested that they find their way into our awareness via dreams.

In his famous book *The Interpretation of Dreams*, Freud wrote that dreams are “...disguised fulfillments of repressed wishes”. He also described two different components of dreams: manifest content and latent content. Manifest content is made up of the actual images, thoughts and content contained within the dream, while the latent content represents the hidden psychological meaning of the dream.

Freud’s theory contributed to the popularity of dream interpretation, which remains popular today. However, research has failed to demonstrate that the manifest content disguises the real psychological significance of a dream.

**Activation-Synthesis Model of Dreaming:**

The activation-synthesis model of dreaming was first proposed by J. Allan Hobson and Robert Mcclarley in 1977. According to this theory, circuits in the brain become activated during sleep, which causes areas of the limbic system involved in emotions, sensations and memories, including the amygdala and hippocampus, to become active. The brain synthesizes and interprets this internal activity and attempts to find meaning in these signals, which results in dreaming. This model suggests that dreams are a subjective interpretation of signals generated by the brain during sleep.

While this theory suggests that dreams are the result of internally generated signals, Hobson does not believe that dreams are meaningless. Instead, he suggests that dreaming is “…our most creative conscious state, one in which the chaotic, spontaneous recombination of cognitive elements produces novel configurations of information: new ideas. While many or even most of these ideas may be nonsensical, if even a few of its fanciful products are truly useful, our dream time will not have been wasted”.

**Other Theories of Dreams:**

Many other theories have been suggested to account for the occurrence and meaning of dreams. The following are just of few of the proposed ideas:

- One theory suggests that dreams are the result of our brains trying to interpret external stimuli during sleep. For example, the sound of the radio may be incorporated into the content of a dream.
• Another theory uses a computer metaphor to account for dreams. According to this theory, dreams serve to ‘clean up’ clutter from the mind, much like clean-up operations in a computer, refreshing the mind to prepare for the next day.
• Yet another model proposes that dreams function as a form of psychotherapy. In this theory, the dreamer is able to make connections between different thoughts and emotions in a safe environment.
• A contemporary model of dreaming combines some elements of various theories. The activation of the brain creates loose connections between thoughts and ideas, which are then guided by the emotions of the dreamer.

**Stages of Sleep**

The invention of the electroencephalograph allowed scientists to study sleep in ways that were not previously possible. During the 1950s, a graduate student named Eugene Aserinsky used this tool to discover what is known today as REM sleep. Further studies of human sleep have demonstrated that sleep progresses through a series of stages in which different brain wave patterns are displayed.

There are two main types of sleep:
1. Non-Rapid Eye Movement (NREM) Sleep (also known as quiet sleep)
2. Rapid Eye Movement (REM) Sleep (also known as active sleep or paradoxical sleep)

**The Beginnings of Sleep**

During the earliest phases of sleep, you are still relatively awake and alert. The brain produces what are known as beta waves, which are small and fast. As the brain begins to relax and slow down, slower waves known as alpha waves are produced. During this time when you are not quite asleep, you may experience strange and extremely vivid sensations known as hypnagogic hallucinations. Common examples of this phenomenon include feeling like you are falling or hearing someone call your name.

Another very common event during this period is known as a myoclonic jerk. If you’ve ever startled suddenly for seemingly no reason at all, then you have experienced this odd phenomenon. While it may seem unusual, these myoclonic jerks are actually quite common.

**Stage 1**

Stage 1 is the beginning of the sleep cycle, and is a relatively light stage of sleep. Stage 1 can be considered a transition period between wakefulness and sleep. In Stage 1, the brain produces high amplitude theta waves, which are very slow brain waves. This period of sleep lasts only a brief time (around 5–10 minutes). If you awaken someone during this stage, they might report that they weren’t really asleep.
Stage 2
Stage 2 is the second stage of sleep and lasts for approximately 20 minutes. The brain begins to produce bursts of rapid, rhythmic brain wave activity known as sleep spindles. Body temperature starts to decrease and heart rate begins to slow.

Stage 3
Deep, slow brain waves known as delta waves begin to emerge during stage 3 sleep. Stage 3 is a transitional period between light sleep and a very deep sleep.

Stage 4
Stage 4 is sometimes referred to as delta sleep because of the slow brain waves known as delta waves that occur during this time. Stage 4 is a deep sleep that lasts for approximately 30 minutes. Bed-wetting and sleepwalking are most likely to occur at the end of stage 4 sleep.

Stage 5
Most dreaming occurs during the fifth stage of sleep, known as rapid eye movement (REM) sleep. REM sleep is characterized by eye movement, increased respiration rate and increased brain activity. REM sleep is also referred to as paradoxical sleep because while the brain and other body systems become more active, muscles become more relaxed. Dreaming occurs because of increased brain activity, but voluntary muscles become paralyzed.

The Sequence of Sleep Stages
It is important to realize, however, that sleep does not progress through these stages in sequence. Sleep begins in stage 1 and progresses into stages 2, 3 and 4. After stage 4 sleep, stage 3 and then stage 2 sleep are repeated before entering REM sleep. Once REM sleep is over, the body usually returns to stage 2 sleep. Sleep cycles through these stages approximately four or five times throughout the night.

On average, we enter the REM stage approximately 90 minutes after falling asleep. The first cycle of REM sleep might last only a short amount of time, but each cycle becomes longer. REM sleep can last up to an hour as sleep progresses.

Top Reasons to Get a Good Night’s Sleep
How Sleep Improves Memory, Reduces Stress and Enhances Decision-Making
When was the last time you found yourself drifting off in the middle of a long class lecture or meeting? According to the National Sleep Foundation’s 2008 “Sleep in America” poll, 29% of participants reported becoming very sleepy or even falling asleep at work in the previous month alone.
Recent research has linked lack of sleep to a wide range of ailments, including memory problems and obesity. Learn more about some of the top reasons why you should get a good night’s sleep.

**Sleep May Help You Learn More Effectively**

Researchers have long believed that sleep plays an important role in memory, but recent evidence suggests that getting a good night’s sleep can improve learning. In one study, researchers found that depriving students of sleep after learning a new skill significantly decreased memory of that skill up to three days later. Known as the memory consolidation theory of sleep, this notion proposes that sleep serves to process and retain information learned earlier while awake. While there is research both for and against the theory, many studies have shown that sleep can play an important role in certain types of memory.

**Research Suggests Sleep Deprivation May Contribute to Obesity**

In addition to affecting memory and learning, lack of sleep has been linked to body weight. In one 2005 study published in the *Archives of Internal Medicine*, overweight participants were found to sleep less than participants of a normal weight. Brandon Peters, About.com’s Guide to Sleep Disorders, reports that poor sleep at age 30 months can predict obesity at age seven. While researchers do not yet understand exactly how sleep disruption impacts appetite and metabolism, getting a good night’s sleep certainly can’t hurt your weight loss or weight maintenance efforts.

**Sleep is Important for Managing Stress**

According to many experts, most people need between seven and eight hours of sleep each night. What happens when you don’t get enough sleep? Symptoms such as moodiness, anxiety, aggression and increased stress levels can result. About.com’s Guide to Stress Management, Elizabeth Scott, suggests taking “power naps” to combat drowsiness, reduce stress and increase productivity. While sleeping more certainly won’t eliminate all stress, it can help increase your readiness to cope with the stress of day-to-day life.

**Sleep Can Help You Make Better Decisions**

Have you ever found yourself struggling to make relatively simple decisions after a night of poor sleep? In addition to reducing such things as response time and accuracy, lack of sleep has also been linked to difficulty making good decisions. In one study published in the journal *Sleep*, researchers found that sleepiness has a serious impact on the ability to make effective decisions. Another study suggested that sleep impairs decision-making when gambling by increasing expectations of potential gains while minimizing losses. If you’re facing a challenging decision, make sure that you are well rested so that you will be at your best.
Учебное издание

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