

Medical Psychology and Sociology: Motivation

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What motivates you to study for the preliminary examination in medicine? Why do you stay in the library instead of having a nice afternoon? For whatever motives and with what degree of intensity we pursue our goals, is what the psychology of motivation deals with. The term motivation derives from the Latin word *motivus* = „triggering movement“. In the following article, read all about the topic motivation that closely follows the study guide for the preliminary examination and has been optimally edited.



The Neurobiological Basics of Motivation

Motivation is closely linked to the neurotransmitter dopamine and the dopaminergic feedback system known as the mesolimbic dopamine system which works as the amplifier pathway in a reward system where activation of the system leads to dopamine release and reinforcement of the behavior. The system originates from the tegmental area and innervates the nucleus accumbens.

- Hunger: The **hypothalamus** and parts of the **amygdala** form “the center of saturation and eating”.
- Social interaction: The **peptide hormone oxytocin** (released during: birth, lactation, orgasm) promote feelings of bonding and trust.

- Amplifier pathway: The **mesolimbic dopamine-system** controls amplification, the reward system

The Theory of Motivation: Subjective Orientation

Motives are divided into primary and secondary group. Even though sexual motives belong to the primary group, they do not serve to maintain homeostasis.

Primary motives	Inherent motives: maintaining homeostasis; and sexual motives	Hunger, thirst, sleep, exploration, freedom from pain, breathing (oxygen), sex
Secondary motives	Learned motives, which are not needed for homeostasis (lower biological significance)	Power, performance, prestige, connection

Theories of Motivation

There are five major theories that try to explain motivation and they are applied to help one increase productivity at his/her workplace. The theories largely apply the basic forms of motivation.

- **Intrinsic motivation:** inner, "self-motivation" to do something.
- **Extrinsic motivation:** motivation based on outer amplifiers, rewards (i.e., money).

The ethological model: the instinct theory

This approach supports the position that most of the animal and human behaviors are based on genetics. The central question of the study of instinct (**ethology**) is:

Which parts of the behavior are inherent and which are learned individually?

The motive here is a state of deficiency, and the individual searches for stimuli to eliminate this state of deficiency. K. Lorenz observed various species and came to the conclusion that specific **instinctive acts** take place in a way that is standardized to the maximum extent.

The sequence of the instinctive act, according to Konrad Lorenz (1937):

1	The impetus elicits appetitive behavior .
2	A key stimulus or a dummy appears.
3	A fixed action pattern (FAP) elicits.
4	An orientating response occurs.
5	The final consummatory act is initiated and the lacking need is satisfied.

Detailed definition of important terms regarding the ethological model

Learned key stimuli that are not present at birth are called imprinting. This imprinting that takes place during the short, learning-sensitive phases are irreversible.

Inherent key stimuli are, for instance, a hungry infant's appetitive behavior and the **schema of childlike characteristics** with its corresponding behavior of affection and

protection. With this schema you can also illustrate the term dummy very well: We react to stuffed toys with big eyes, small noses and round faces in a similar way we react to a cute baby face—we pick them up and caress them.

Final act	The final act of consummation leads to loss of motivation to act according to a defined behavioral program.	Blackbirds: open beak, swallow the food, satisfaction of need by saturation
Displacement behavior	The tension between two action tendencies leads to behavioral inhibition and a new action, which is different from the two tension producing actions.	Scratching one's head, gnawing one's nails, cracking one's knuckles
Vacuum activity	The motive is so strong that it is triggered without a key stimulus.	The hunting behavior of a bird (according to Lorenz's experiments). Despite the absence of insects, the entire process of catching flies is carried out.

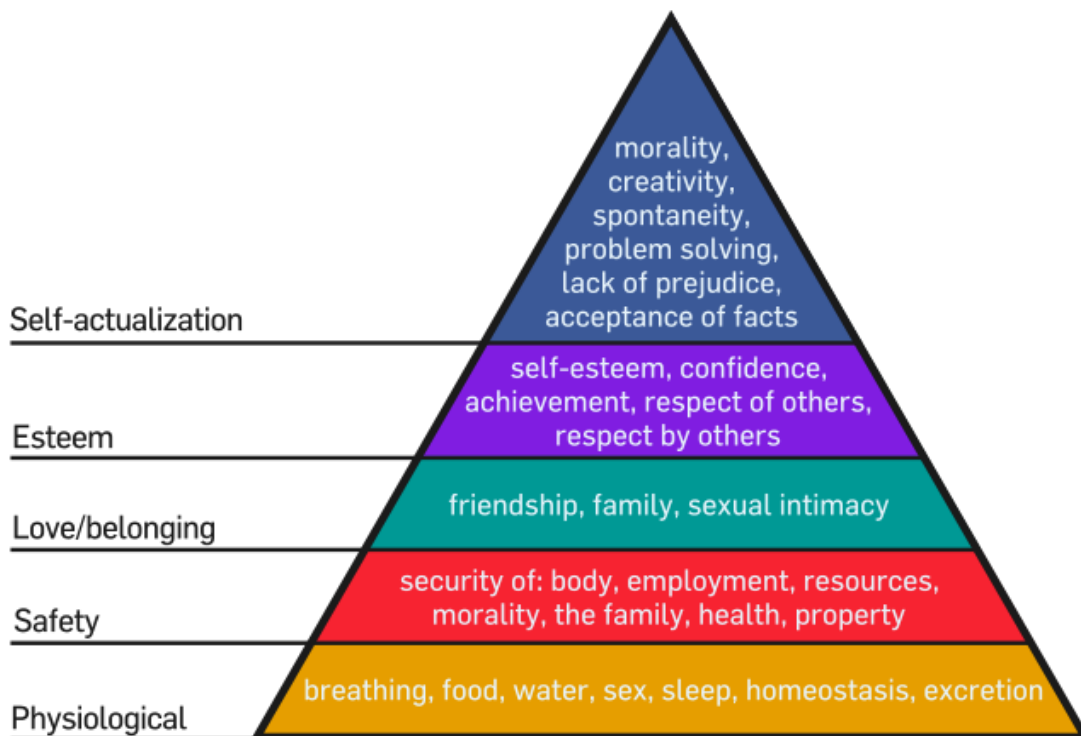
Maslow's Hierarchy of Needs (1971)

Maslow assumes that primary needs have to be satisfied first, before secondary needs can become relevant. Thereby he supports a humanistic image of humankind.

Only the extended motivations represent man.

Every human being potentially strives for self-actualization.

The needs for self-actualization (**transcendence**) can only be satisfied in a small fraction of people. Transcendence means to give life a higher meaning, to feel in harmony with the whole.



[Image](#): "Maslow's hierarchy of needs" by J. Finkelstein. License [CC BY-SA 3.0](#)

The hierarchy is made up of five levels of needs as:

According to this theory you must be in good health, safe, secure and in meaningful relationships and confidence before you are able to be the most you can be.

The Learning Theory Approach

The learning theory approach is based on the learning process according to the principles of operant conditioning.

Expectancy-value Theory

The motivation consists of the results of two basic questions:

- How attractive or valuable are the task values/task goals?
- How high is the subjective probability that this result happens? How high is the associated expectancy?

Please note: motivation = probability of task value (expectancy) x attraction (value)

The Evolutionary Psychological Approach: Voluntary Actions

Actually, you would rather go to the lake now instead of studying in the library for the preliminary examination. Your will makes it possible for you to pursue important goals even though there is no motivational basis at the moment.

The tendency (intention) is the basis for the voluntary actions. The **volitional** (volition = will/will power) **process** here is stronger than the **motivational process** (i.e., fasting despite hunger). The Rubicon model summarizes the action phases.

The Rubicon model of action phases (Heckhausen et al., 1987)

Strategies for the evolutionary action control:

- **Motivation control:** targeted increase of motivation with renewed focus on the goal („I definitely want to pass the preliminary examination!“).
- **Environmental control:** change in the environment, in order to achieve the goal more easily (learning in the library instead of at home with a view of the park).

Trip to the clinic: The transtheoretical model

The **transtheoretical model (TTM)**, according to Prochaska and DiClemente, should enable therapists to better evaluate and influence their patients' behavior. This is especially important in patients with dependency issues (see below) as it helps for therapeutic decisions. The TTM consists of six steps:

1	Purposelessness/carelessness	precontemplation
2	Contemplation/realization	contemplation
3	Preparation	preparation
4	Action	action
5	Maintenance	maintenance
6	Termination/permanent maintenance	termination

The therapeutic approach: It is important to work in synchronized phases! How do you, for instance, convince a patient to stay sober, if he is not even aware of the health risk of substance abuse? The following table summarizes which main strategy to follow in each phase:

precontemplation	Creation of an awareness of the problem.
contemplation	Resolve ambivalent thoughts.
preparation	Precise focus on the goal with the step-by-step plan.
action	Boosting one's trust in one's own strengths.
maintenance	Preventative behavior against a backslide.
termination	The behavior to achieve the goal has become "normal."

Please note: Questions regarding the transtheoretical model is a common part of the written preliminary examination.

The Motivation Conflicts

It is rare that there is just one motivation or one tendency toward need. On the contrary, often there are simultaneous different motivational tendencies in us, and we have to decide on the one to follow. Hereby, conflicts arise.

The 3 conflict typologies by Lewin (1931):

- **Appetence:** Tendency, which aims to satisfy a craving by doing a certain action.
- **Aversion:** Tendency to avoid action for fear it will not accomplish the desired effect.

Appetence-Appetence conflict: The approach conflict.

In an appetence conflict, the affected individual has to decide between two positive alternatives.

Example: You have been admitted to study veterinary medicine as well as human medicine and now have to decide on one.

Aversion-Aversion conflict: The avoidance conflict

In an aversion conflict, the affected individual has the choice between two negative alternatives, in other words choosing the "lesser evil".

Example: You contemplate working two hours overtime in the evening versus getting up earlier tomorrow in order to finish writing the discharge letters.

Appetence-aversion conflict: The ambivalence conflict

In an appetence-aversion conflict, the individual's goal has both negative and positive aspects at the same time ("two sides of a coin"). He is disgusted and attracted simultaneously to fulfill the tendency toward the need.

Example: A depressed patient would like to undergo therapy with antidepressants but fears the side effects of gaining weight.

Double appetence-aversion conflict by Miller (1944)

The fourth type of conflict extends Lewin's simple typology by adding the **double appetence-aversion conflict**. Here, the individuals have to decide between two alternatives, each of which has positive and negative aspects.

Example: Do you choose the low paying residency in your favorite city over the highly paid job at a rural hospital in the periphery?

The Achievement Motivation

One's desire to want to beat themselves or others in their achievements is called **achievement motivation**. People with high achievement motivation choose tasks that are always a degree more challenging. Only if failure or success can be the result of a task, is it possible to assess a quality standard. Aside from positive responses like joy and pride, one is motivated by the desire for increasing **efficiency**: The road to success is optimized more and more in variations.

The Risk-Preference-Model by Atkinson (1957):

Expectancy x Value

You want to get a B on your preliminary examination while your fellow student is completely satisfied with a D. The basic question of the Atkinson model is:

Why do people set goals at different levels?

Choosing a goal (choosing the difficulty of the task) = the probability of success (expectation) x appeal of success (value).

- Moderately difficult tasks provide information about one's own efficiency because success or failure is possible.
- Easy tasks are executed without any problem and do not lead to positive effects.
- Difficult tasks have a low probability of success. If success occurs, however, the positive effects are that much greater.
- **Success motivated** individuals choose moderately difficult tasks.
- **Failure motivated** individuals choose very easy or very difficult tasks.

The Attribution Theory

Depending on one's explanatory style, people justify their successes and failures. These **causal attributions** are divided into different attributional dimensions: **internal/external, stable/unstable** and **specific/global**. Read everything regarding explanatory styles [here](#).

The fundamental attribution error: Actor-observer bias

The observers' attitude to relate one's behavior primarily back to human behavioral traits and putting situational factors aside (i.e., aggressive behavior), is called **fundamental attribution error**. The actor would explain his behavior exactly the opposite way and primarily blame the situation for his actions.

Addiction: Looking for More

Definition of addiction (WHO): Addiction is a psychological and physical state, which is characterized by the fact that an individual feels an insurmountable desire for a certain substance or a certain behavior despite physical, mental or social disadvantages. He can no longer control this desire and is dominated by it.

The topic addiction belongs in the article about motivation because addicts act very purposefully: To get the "pleasure" of the addictive substance is usually the only motive for addicts, and consequently they pursue this goal. One differentiates between **substance dependencies** and **substance independent addictions** (food addiction, gambling addiction).

Hallucinogens (LSD, mescaline), opiates (morphine, heroin), cannabis, alcohol, nicotine and analgesics are counted among **psychoactive substances**.

According to **DSM-IV**, dependency exists if three of the following criteria are present:

- Development of tolerance.
- Physical withdrawal symptoms.
- The substance is consumed in larger amounts and longer than intended.
- The substance intake can no longer be controlled.
- A lot of time is spent on procurement and consumption of the substance and other factors (work, family, leisure activities, etc.) are neglected.
- The substance is consumed despite physical and psychological damages.

Important facts about alcohol, nicotine and drugs

- **Alcohol abuse:** [Alcohol dependence](#) is most common in men in western industrialized nations. In women, it is the second most common mental illness (88-94% of the adult population drinks alcohol regularly).
- **Nicotine abuse:** In Germany, 17.4 million people abuse nicotine.
- **Drug abuse:** In Germany, between 1.4 and 1.6 million people are dependent on drugs, which were initially prescribed by a physician, i.e., [Benzodiazepines](#).

How does a dependence arise?

Several factors play a role in developing dependency. The WHO speaks of a multifactorial model of explanation.

Personal factors	Negative self-image; tendency to reward oneself quickly; impulsive, antisocial behavior
Environmental factors	Family: disinterested and unstable environment, little to no emotional attention, little scholastic achievements, status gain in peer groups (testing courage, power games, "coolness"), easy availability of substances (especially alcohol, nicotine)
Effect of the drug	Enhancing effect for consumers, effect on the mesolimbic dopamine system (reward system) with tolerance development, withdrawal symptoms associated with abstinence

Psychosocial effects of the drug

Theoretical learning processes are important to explain the origin of dependence. On the one hand, **operant conditioning** takes place: The drug leads to relaxation (positive reinforcement), the drug prevents negative emotions/situations or withdrawal symptoms disappear (negative reinforcement). Classically conditioned are situational and social triggers such as getting together at a bar, parties, conflict situations (partnership, supervisors, etc.).

Review Questions

The answers are below the references.

1. Different hormones and transmitter substances belong to the neurobiological bases for the origin of motivation. Which behavior is mainly promoted by oxytocin?

- A. Aggression
- B. Sensation Seeking
- C. Competitive behavior
- D. Maternal bonding-behavior
- E. Defense reactions (Fight and Flight)

2. First and foremost, primary motives have an important function. They are:

- A. To secure the psychological balance.
- B. To encourage performance and to gain rewards (positive reinforcement).
- C. To support study-theoretical processes (operant and classical conditioning).
- D. To match individual interest for the communities' good.
- E. To satisfy simultaneously physical and psychical needs.

3. A 15-year-old student regularly smokes cannabis with her clique. So far, she has not considered stopping her drug consumption. What stage in the transtheoretical model according to Prochaska and DiClemente would you put her in?

- A. Contemplation
- B. Precontemplation
- C. Maintenance
- D. Action
- E. Preparation

References

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Correct Answers: 1D, 2A, 3B

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