Motivation: Why We Do What We Do

Authored by

mohammad looti

June 12, 2026

Motivation

Motivation is the driving force by which humans achieve their goals. Motivation is said to be intrinsic or extrinsic. The term is generally used for humans but it can also be used to describe the causes for animal behavior as well. This article refers to human motivation. According to various theories, motivation may be rooted in a basic need to minimize physical pain and maximize pleasure, or it may include specific needs such as eating and resting, or a desired object, goal, state of being, ideal, or it may be attributed to less-apparent reasons such as altruism, selfishness, morality, or avoiding mortality. Conceptually, motivation should not be confused with either volition or optimism. Motivation is related to, but distinct from, emotion.

Motivation concepts

Intrinsic and extrinsic motivation

Intrinsic motivation refers to motivation that is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on any external pressure. Intrinsic motivation has been studied by social and educational psychologists since the early 1970s. Research has found that it is usually associated with high educational achievement and enjoyment by students. Explanations of intrinsic motivation have been given in the context of Fritz Heider's attribution theory, Bandura's work on self-efficacy, and Deci and Ryan's cognitive evaluation theory (see self-determination theory). Students are likely to be intrinsically motivated if they:

attribute their educational results to internal factors that they can control (e.g. the amount of effort they put in),
believe they can be effective agents in reaching desired goals (i.e. the results are not determined by luck),
are interested in mastering a topic, rather than just rote-learning to achieve good grades.

Extrinsic motivation comes from outside of the individual. Common extrinsic motivations are rewards like money and grades, coercion and threat of punishment. Competition is in general extrinsic because it encourages the performer to win and beat others, not to enjoy the intrinsic rewards of the activity. A crowd cheering on the individual and trophies are also extrinsic incentives.

Social psychological research has indicated that extrinsic rewards can lead to overjustification and a subsequent reduction in intrinsic motivation. In one study demonstrating this effect, children who expected to be (and were) rewarded with a ribbon and a gold star for drawing pictures spent less time playing with the drawing materials in subsequent observations than children who were assigned to an unexpected reward condition and to children who received no extrinsic reward.

Self-determination theory proposes that extrinsic motivation can be internalised by the individual if

the task fits with their values and beliefs and therefore helps to fulfill their basic psychological needs.

Self-control

The self-control of motivation is increasingly understood as a subset of emotional intelligence; a person may be highly intelligent according to a more conservative definition (as measured by many intelligence tests), yet unmotivated to dedicate this intelligence to certain tasks. Yale School of Management professor Victor Vroom's "expectancy theory" provides an account of when people will decide whether to exert self control to pursue a particular goal.

Drives and desires can be described as a deficiency or need that activates behavior that is aimed at a goal or an incentive. These are thought to originate within the individual and may not require external stimuli to encourage the behavior. Basic drives could be sparked by deficiencies such as hunger, which motivates a person to seek food; whereas more subtle drives might be the desire for praise and approval, which motivates a person to behave in a manner pleasing to others.

By contrast, the role of extrinsic rewards and stimuli can be seen in the example of training animals by giving them treats when they perform a trick correctly. The treat motivates the animals to perform the trick consistently, even later when the treat is removed from the process.
Motivational theories

Incentive theory

A reward, tangible or intangible, is presented after the occurrence of an action (i.e. behavior) with the intent to cause the behavior to occur again. This is done by associating positive meaning to the behavior. Studies show that if the person receives the reward immediately, the effect would be greater, and decreases as duration lengthens. Repetitive action-reward combination can cause the action to become habit. Motivation comes from two sources: oneself, and other people. These two sources are called intrinsic motivation and extrinsic motivation, respectively.

Reinforcers and reinforcement principles of behavior differ from the hypothetical construct of reward. A reinforcer is any stimulus change following a response that increases the future frequency or magnitude of that response. Positive reinforcement is demonstrated by an increase in the future frequency or magnitude of a response due to in the past being followed contingently by a reinforcing stimulus. Negative reinforcement involves stimulus change consisting of the removal of an aversive stimulus following a response. Positive reinforcement involves a stimulus change consisting of the presentation or magnification of an appetitive stimulus following a response. From this perspective, motivation is mediated by environmental events, and the concept of distinguishing between intrinsic and extrinsic forces is irrelevant.

Applying proper motivational techniques can be much harder than it seems. Steven Kerr notes that when creating a reward system, it can be easy to reward A, while hoping for B, and in the process, reap harmful effects that can jeopardize your goals.

Incentive theory in psychology treats motivation and behavior of the individual as they are influenced by beliefs, such as engaging in activities that are expected to be profitable. Incentive theory is promoted by behavioral psychologists, such as B.F. Skinner and literalized by behaviorists, especially by Skinner in his philosophy of Radical behaviorism, to mean that a person's actions always have social ramifications: and if actions are positively received people are more likely to act in this manner, or if negatively received people are less likely to act in this manner. Incentive theorists tend to distinguish between wanting and liking, where liking is a passive function evaluating a stimulus, but wanting adds an active process "attracting" the person towards the stimulus.

Incentive theory distinguishes itself from other motivation theories, such as drive theory, in the direction of the motivation. In incentive theory, stimuli "attract", to use the term above, a person towards them. As opposed to the body seeking to reestablish homeostasis pushing it towards the stimulus. In terms of behaviorism, incentive theory involves positive reinforcement: the stimulus has been conditioned to make the person happier. For instance, a person knows that eating food, drinking water, or gaining social capital will make them happier. As opposed to in drive theory, which involves negative reinforcement: a stimulus has been associated with the removal of the punishment- the lack of homeostasis in the body. For example, a person has come to know that if they eat when hungry, it will eliminate that negative feeling of hunger, or if they drink when thirsty, it will eliminate that negative feeling of thirst.

Drive-reduction theories

There are a number of drive theories. The Drive Reduction Theory grows out of the concept that we have certain biological drives, such as hunger. As time passes the strength of the drive increases if it is not satisfied (in this case by eating). Upon satisfying a drive the drive's strength is reduced. The theory is based on diverse ideas from the theories of Freud to the ideas of feedback control systems, such as a thermostat.

Drive theory has some intuitive or folk validity. For instance when preparing food, the drive model appears to be compatible with sensations of rising hunger as the food is prepared, and, after the food has been consumed, a decrease in subjective hunger. There are several problems, however, that leave the validity of drive reduction open for debate. The first problem is that it does not explain how secondary reinforcers reduce drive. For example, money satisfies no biological or psychological needs, but a pay check appears to reduce drive through second-order conditioning. Secondly, a drive, such as hunger, is viewed as having a "desire" to eat, making the drive a

homuncular being--a feature criticized as simply moving the fundamental problem behind this "small man" and his desires.

In addition, it is clear that drive reduction theory cannot be a complete theory of behavior, or a hungry human could not prepare a meal without eating the food before he finished cooking it. The ability of drive theory to cope with all kinds of behavior, from not satisfying a drive (by adding on other traits such as restraint), or adding additional drives for "tasty" food, which combine with drives for "food" in order to explain cooking render it hard to test.

Cognitive dissonance theory

Suggested by Leon Festinger, this occurs when an individual experiences some degree of discomfort resulting from an incompatibility between two cognitions. For example, a consumer may seek to reassure himself regarding a purchase, feeling, in retrospect, that another decision may have been preferable.

While not a theory of motivation, per se, the theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance. They do this by changing their attitudes, beliefs, or actions. Dissonance is also reduced by justifying, blaming, and denying. It is one of the most influential and extensively studied theories in social psychology.

Need theories

Content theory

Need hierarchy theory

The content theory includes the hierarchy of needs from Maslow and the two- factor theory from Herzberg.

Abraham Maslow's theory is one of the most widely discussed theories of motivation.

The American motivation psychologist Abraham H. Maslow developed the Hierarchy of needs consistent of five hierarchic classified classes, which shows the complexity of human requirements. Maslow says that first of all the basic requirements have to be settled, before higher requirements show to advantage in stages. The basic requirements build the first step in his pyramid. They decide about to be or not to be. If there is any deficit on this level, so the whole behavior of a human will be oriented to this to satisfy it. Subsequently we do have the second level, which awake a need for security. This is based on the needs that are to remain satisfied in the future. Only after securing the means of existence, the motives shift in the social sphere, which form the third stage. Psychological requirements consist to the fourth level, while the top of the hierarchy comprise the

self- realization.

So theory can be summarized as follows:

Human beings have wants and desires which influence their behavior. Only unsatisfied needs influence behavior, satisfied needs do not.
Since needs are many, they are arranged in order of importance, from the basic to the complex.
The person advances to the next level of needs only after the lower level need is at least minimally satisfied.
The further the progress up the hierarchy, the more individuality, humanness and psychological health a person will show.

The needs, listed from basic (lowest-earliest) to most complex (highest-latest) are as follows:

Physiology (hunger, thirst, sleep, etc.)
Safety/Security/Shelter/Health
Belongingness/Love/Friendship
Self-esteem/Recognition/Achievement
Self actualization

Herzberg's two-factor theory

Frederick Herzberg's two-factor theory, a.k.a. intrinsic/extrinsic motivation, concludes that certain factors in the workplace result in job satisfaction, but if absent, they don't lead to dissatisfaction but no satisfaction.

The factors that motivate people can change over their lifetime, but "respect for me as a person" is one of the top motivating factors at any stage of life.

He distinguished between:

Motivators; (e.g. challenging work, recognition, responsibility) which give positive satisfaction, and Hygiene factors; (e.g. status, job security, salary and fringe benefits) that do not motivate if present, but, if absent, result in demotivation.

The name Hygiene factors is used because, like hygiene, the presence will not make you healthier, but absence can cause health deterioration.

The theory is sometimes called the "Motivator-Hygiene Theory" and/or "The Dual Structure Theory."

Herzberg's theory has found application in such occupational fields as information systems and in studies of user satisfaction (see Computer user satisfaction).

Alderfer's ERG theory

Alderfer, expanding on Maslow's hierarchy of needs, created the ERG theory. This theory posits that there are three groups of core needs -- existence, relatedness, and growth, hence the label: ERG theory. The existence group is concerned with providing our basic material existence requirements. They include the items that Maslow considered to be physiological and safety needs. The second group of needs are those of relatedness- the desire we have for maintaining important interpersonal relationships. These social and status desires require interaction with others if they are to be satisfied, and they align with Maslow's social need and the external component of Maslow's esteem classification. Finally, Alderfer isolates growth needs' an intrinsic desire for personal development. These include the intrinsic component from Maslow's esteem category and the characteristics included under self-actualization.

Self-determination theory

Self-determination theory, developed by Edward Deci and Richard Ryan, focuses on the importance of intrinsic motivation in driving human behavior. Like Maslow's hierarchical theory and others that built on it, SDT posits a natural tendency toward growth and development. Unlike these other theories, however, SDT does not include any sort of "autopilot" for achievement, but instead requires active encouragement from the environment. The primary factors that encourage motivation and development are autonomy, competence feedback, and relatedness.
Broad theories

The latest approach in developing a broad, integrative theory of motivation is Temporal Motivation Theory, developed by Piers Steel and Cornelius Konig. Introduced in their 2007 Academy of Management Review article, it synthesizes into a single formulation the primary aspects of all other major motivational theories, including Incentive Theory, Drive Theory, Need Theory, Self-Efficacy and Goal Setting. Notably, it simplifies the field of motivation considerably and allows findings from one theory to be translated into terms of another.

Also, Achievement Motivation is an integrative perspective as outlined in the "Onion-Ring-Model of Achievement Motivation" by Heinz Schuler, George C. Thornton III, Andreas Frintrup and Rose Mueller-Hanson. It is based on the premise that performance motivation results from the way broad components of personality are directed towards performance. As a result, it includes a range of dimensions that are relevant to success at work but which are not conventionally regarded as being part of performance motivation. Especially it integrates formerly separated approaches as Need for Achievement with e.g. social motives like dominance. The Achievement Motivation Inventory (AMI) (Schuler, Thornton, Frintrup & Mueller-Hanson, 2003) is based on this theory and assesses three factors (17 separated scales) relevant to vocational and professional success.

Cognitive theories

Goal-setting theory

Goal-setting theory is based on the notion that individuals sometimes have a drive to reach a clearly defined end state. Often, this end state is a reward in itself. A goal's efficiency is affected by three features: proximity, difficulty and specificity. An ideal goal should present a situation where the time between the initiation of behavior and the end state is close. This explains why some children are more motivated to learn how to ride a bike than to master algebra. A goal should be moderate, not too hard or too easy to complete. In both cases, most people are not optimally motivated, as many want a challenge (which assumes some kind of insecurity of success). At the same time people want to feel that there is a substantial probability that they will succeed. Specificity concerns the description of the goal in their class. The goal should be objectively defined and intelligible for the individual. A classic example of a poorly specified goal is to get the highest possible grade. Most children have no idea how much effort they need to reach that goal.

Models of behavior change

Social-cognitive models of behavior change include the constructs of motivation and volition. Motivation is seen as a process that leads to the forming of behavioral intentions. Volition is seen as a process that leads from intention to actual behavior. In other words, motivation and volition refer to goal setting and goal pursuit, respectively. Both processes require self-regulatory efforts. Several self-regulatory constructs are needed to operate in orchestration to attain goals. An example of such a motivational and volitional construct is perceived self-efficacy. Self-efficacy is supposed to facilitate the forming of behavioral intentions, the development of action plans, and the initiation of action. It can support the translation of intentions into action.

Unconscious motivation

Some psychologists believe that a significant portion of human behavior is energized and directed by unconscious motives. According to Maslow, "Psychoanalysis has often demonstrated that the relationship between a conscious desire and the ultimate unconscious aim that underlies it need not be at all direct."

Intrinsic motivation and the 16 basic desires theory

Starting from studies involving more than 6,000 people, Professor Steven Reiss has proposed a theory that find 16 basic desires that guide nearly all human behavior.

The desires are:

Acceptance, the need for approval
Curiosity, the need to learn
Eating, the need for food
Family, the need to raise children
Honor, the need to be loyal to the traditional values of one's clan/ethnic group
Idealism, the need for social justice
Independence, the need for individuality
Order, the need for organized, stable, predictable environments
Physical activity, the need for exercise
Power, the need for influence of will
Romance, the need for sex
Saving, the need to collect
Social contact, the need for friends (peer relationships)
Status, the need for social standing/importance
Tranquility, the need to be safe
Vengeance, the need to strike back/to win

In this model, people differ in these basic desires. These basic desires represent intrinsic desires that directly motivate a person's behavior, and not aimed at indirectly satisfying other desires. People may also be motivated by non-basic desires, but in this case this does not relate to deep motivation, or only as a means to achieve other basic desires.

Controlling motivation

The control of motivation is only understood to a limited extent. There are many different approaches of motivation training, but many of these are considered pseudoscientific by critics. To understand how to control motivation it is first necessary to understand why many people lack motivation.

Employee motivation

Workers in any organization need something to keep them working. Most times the salary of the employee is enough to keep him or her working for an organization. However, sometimes just working for salary is not enough for employees to stay at an organization. An employee must be motivated to work for a company or organization. If no motivation is present in an employee, then that employee's quality of work or all work in general will deteriorate.

When motivating an audience, you can use general motivational strategies or specific motivational appeals. General motivational strategies include soft sell versus hard sell and personality type. Soft sell strategies have logical appeals, emotional appeals, advice and praise. Hard sell strategies

have barter, outnumbering, pressure and rank. Also, you can consider basing your strategy on your audience personality. Specific motivational appeals focus on provable facts, feelings, right and wrong, audience rewards and audience threats.

Drugs

Some authors, especially in the transhumanist movement, have suggested the use of "smart drugs", also known as nootropics, as "motivation-enhancers". The effects of many of these drugs on the brain are emphatically not well understood, and their legal status often makes open experimentation difficult.

Applications

Education

Motivation is of particular interest to educational psychologists because of the crucial role it plays in student learning. However, the specific kind of motivation that is studied in the specialized setting of education differs qualitatively from the more general forms of motivation studied by psychologists in other fields.

Motivation in education can have several effects on how students learn and how they behave towards subject matter. It can:

Direct behavior toward particular goals
Lead to increased effort and energy
Increase initiation of, and persistence in, activities
Enhance cognitive processing
Determine what consequences are reinforcing
Lead to improved performance.

Because students are not always internally motivated, they sometimes need situated motivation, which is found in environmental conditions that the teacher creates.

The majority of new student orientation leaders at colleges and universities recognize that distinctive needs of students should be considered in regard to orientation information provided at the beginning of the higher education experience. Research done by Whyte in 1986 raised the awareness of counselors and educators in this regard. In 2007, the National Orientation Directors Association reprinted Cassandra B. Whyte's research report allowing readers to ascertain improvements made in addressing specific needs of students over a quarter of a century later to help with academic success.

There are two kinds of motivation:

Intrinsic motivation occurs when people are internally motivated to do something because it either brings them pleasure, they think it is important, or they feel that what they are learning is significant. It has been shown that intrinsic motivation for education drops from grades 3-9 though the exact cause cannot be ascertained. Also, in younger students it has been shown that contextualizing material that would otherwise be presented in an abstract manner increases the intrinsic motivation of these students.
Extrinsic motivation comes into play when a student is compelled to do something or act a certain way because of factors external to him or her (like money or good grades).

Whyte researched and reported about the importance of locus of control and academic achievement. Students tending toward a more internal locus of control are more academically successful, thus encouraging curriculum and activity development with consideration of motivation theories.

Motivation has been found to be an important element in the concept of Andragogy (what motivates the adult learner), and in treating Autism Spectrum Disorders, as in Pivotal Response Therapy.

Sudbury Model schools' approach

Sudbury Model schools adduce that the cure to the problem of procrastination, of learning in general, and particularly of scientific illiteracy is to remove once and for all what they call the underlying disease: compulsion in schools. They contend that human nature in a free society recoils from every attempt to force it into a mold; that the more requirements we pile onto children at school, the surer we are to drive them away from the material we are trying to force down their throats; that after all the drive and motivation of infants to master the world around them is legendary. They assert that schools must keep that drive alive by doing what some of them do: nurturing it on the freedom it needs to thrive.

Sudbury Model schools do not perform and do not offer evaluations, assessments, transcripts, or recommendations, asserting that they do not rate people, and that school is not a judge; comparing students to each other, or to some standard that has been set is for them a violation of the student's right to privacy and to self-determination. Students decide for themselves how to measure their progress as self-starting learners as a process of self-evaluation: real life-long learning and the proper educational evaluation for the 21st century, they adduce. According to Sudbury Model schools, this policy does not cause harm to their students as they move on to life outside the school. However, they admit it makes the process more difficult, but that such hardship is part of the students learning to make their own way, set their own standards and meet their own

goals. The no-grading and no-rating policy helps to create an atmosphere free of competition among students or battles for adult approval, and encourages a positive cooperative environment amongst the student body.

Business

At lower levels of Maslow's hierarchy of needs, such as physiological needs, money is a motivator, however it tends to have a motivating effect on staff that lasts only for a short period (in accordance with Herzberg's two-factor model of motivation). At higher levels of the hierarchy, praise, respect, recognition, empowerment and a sense of belonging are far more powerful motivators than money, as both Abraham Maslow's theory of motivation and Douglas McGregor's theory X and theory Y (pertaining to the theory of leadership) demonstrate.

Maslow has money at the lowest level of the hierarchy and shows other needs are better motivators to staff. McGregor places money in his Theory X category and feels it is a poor motivator. Praise and recognition are placed in the Theory Y category and are considered stronger motivators than money.

Motivated employees always look for better ways to do a job.
Motivated employees are more quality oriented.
Motivated workers are more productive.

The average workplace is about midway between the extremes of high threat and high opportunity. Motivation by threat is a dead-end strategy, and naturally staff are more attracted to the opportunity side of the motivation curve than the threat side. Motivation is a powerful tool in the work environment that can lead to employees working at their most efficient levels of production.

Nonetheless, Steinmetz also discusses three common character types of subordinates: ascendant, indifferent, and ambivalent who all react and interact uniquely, and must be treated, managed, and motivated accordingly. An effective leader must understand how to manage all characters, and more importantly the manager must utilize avenues that allow room for employees to work, grow, and find answers independently.

The assumptions of Maslow and Herzberg were challenged by a classic study at Vauxhall Motors' UK manufacturing plant. This introduced the concept of orientation to work and distinguished three main orientations: instrumental (where work is a means to an end), bureaucratic (where work is a source of status, security and immediate reward) and solidaristic (which prioritises group loyalty).

Other theories which expanded and extended those of Maslow and Herzberg included Kurt Lewin's Force Field Theory, Edwin Locke's Goal Theory and Victor Vroom's Expectancy theory. These tend to stress cultural differences and the fact that individuals tend to be motivated by different

factors at different times.

According to the system of scientific management developed by Frederick Winslow Taylor, a worker's motivation is solely determined by pay, and therefore management need not consider psychological or social aspects of work. In essence, scientific management bases human motivation wholly on extrinsic rewards and discards the idea of intrinsic rewards.

In contrast, David McClelland believed that workers could not be motivated by the mere need for money--in fact, extrinsic motivation (e.g., money) could extinguish intrinsic motivation such as achievement motivation, though money could be used as an indicator of success for various motives, e.g., keeping score. In keeping with this view, his consulting firm, McBer & Company, had as its first motto "To make everyone productive, happy, and free." For McClelland, satisfaction lay in aligning a person's life with their fundamental motivations.

Elton Mayo found that the social contacts a worker has at the workplace are very important and that boredom and repetitiveness of tasks lead to reduced motivation. Mayo believed that workers could be motivated by acknowledging their social needs and making them feel important. As a result, employees were given freedom to make decisions on the job and greater attention was paid to informal work groups. Mayo named the model the Hawthorne effect. His model has been judged as placing undue reliance on social contacts at work situations for motivating employees.

In Essentials of Organizational Behavior, Robbins and Judge examine recognition programs as motivators, and identify five principles that contribute to the success of an employee incentive program:

Recognition of employees' individual differences, and clear identification of behavior deemed worthy of recognition
Allowing employees to participate
Linking rewards to performance
Rewarding of nominators
Visibility of the recognition process

Games

Motivational models are central to game design, because without motivation a player will not be interested in progressing further within a game. Several models for gameplay motivations have been proposed, including Richard Bartle's. Jon Radoff has proposed a four-quadrant model of gameplay motivation that includes cooperation, competition, immersion and achievement. The motivational structure of games is central to the gamification trend, which seeks to apply game-based motivation to business applications.

Emotion

Emotion is the complex psychophysiological experience of an individual's state of mind as interacting with biochemical (internal) and environmental (external) influences. In humans, emotion fundamentally involves "physiological arousal, expressive behaviors, and conscious experience." Emotion is associated with mood, temperament, personality and disposition, and motivation. Motivations direct and energize behavior, while emotions provide the affective component to motivation, positive or negative.

No definitive taxonomy of emotions exists, though numerous taxonomies have been proposed. Some categorizations include:

Cognitive" versus "non-cognitive" emotions
Instinctual emotions (from the amygdala), versus cognitive emotions (from the prefrontal cortex).
Categorization based on duration: Some emotions occur over a period of seconds (for example, surprise), whereas others can last years (for example, love).

A related distinction is between the emotion and the results of the emotion, principally behaviors and emotional expressions. People often behave in certain ways as a direct result of their emotional state, such as crying, fighting or fleeing. If one can have the emotion without the corresponding behavior, then we may consider the behavior not to be essential to the emotion.

The James-Lange theory posits that emotional experience is largely due to the experience of bodily changes. The "functionalist" approach to emotions (for example, Nico Frijda and Freitas-Magalhaes) holds that emotions have evolved for a particular function, such as to keep the subject safe.

Etymology

The English word emotion is derived from the French word émouvoir. This is based on the Latin emovere, where e- (variant of ex-) means "out" and movere means "move." The related term "motivation" is also derived from the word movere.

Classification

Examples of basic emotions.

There are basic and complex categories, where some basic emotions can be modified in some way to form complex emotions (for example, Paul Ekman). In one model, the complex emotions could arise from cultural conditioning or association combined with the basic emotions. Alternatively, analogous to the way primary colors combine, primary emotions could blend to form

the full spectrum of human emotional experience. For example interpersonal anger and disgust could blend to form contempt.

Robert Plutchik proposed a three-dimensional "circumplex model" which describes the relations among emotions. This model is similar to a color wheel. The vertical dimension represents intensity, and the circle represents degrees of similarity among the emotions. He posited eight primary emotion dimensions arranged as four pairs of opposites. Some have also argued for the existence of meta-emotions which are emotions about emotions.

Another important means of distinguishing emotions concerns their occurrence in time. Some emotions occur over a period of seconds (for example, surprise), whereas others can last years (for example, love). The latter could be regarded as a long term tendency to have an emotion regarding a certain object rather than an emotion proper (though this is disputed). A distinction is then made between emotion episodes and emotional dispositions. Dispositions are also comparable to character traits, where someone may be said to be generally disposed to experience certain emotions, though about different objects. For example an irritable person is generally disposed to feel irritation more easily or quickly than others do. Finally, some theorists (for example, Klaus Scherer, 2005) place emotions within a more general category of "affective states" where affective states can also include emotion-related phenomena such as pleasure and pain, motivational states (for example, hunger or curiosity), moods, dispositions and traits.

The neural correlates of hate have been investigated with an fMRI procedure. In this experiment, people had their brains scanned while viewing pictures of people they hated. The results showed increased activity in the medial frontal gyrus, right putamen, bilaterally in the premotor cortex, in the frontal pole, and bilaterally in the medial insula of the human brain. The researchers concluded that there is a distinct pattern of brain activity that occurs when people are experiencing hatred (Zeki and Romaya, 2008).

Theories

Theories about emotions stretch back at least as far as the stoics of ancient Greece, as well as Plato and Aristotle. We also see sophisticated theories in the works of philosophers such as René Descartes, Baruch Spinoza and David Hume. Later theories of emotions tend to be informed by advances in empirical research. Often theories are not mutually exclusive and many researchers incorporate multiple perspectives (theories) in their work.

Somatic theories

Somatic theories of emotion claim that bodily responses rather than judgements are essential to emotions. The first modern version of such theories comes from William James in the 1880s. The

theory lost favor in the 20th century, but has regained popularity more recently due largely to theorists such as John Cacioppo, António Damásio, Joseph E. LeDoux and Robert Zajonc who are able to appeal to neurological evidence.

James-Lange theory

William James, in the article What is an Emotion?, argued that emotional experience is largely due to the experience of bodily changes. The Danish psychologist Carl Lange also proposed a similar theory at around the same time, so this position is known as the James-Lange theory. This theory and its derivatives state that a changed situation leads to a changed bodily state. As James says "the perception of bodily changes as they occur is the emotion." James further claims that "we feel sad because we cry, angry because we strike, afraid because we tremble, and neither we cry, strike, nor tremble because we are sorry, angry, or fearful, as the case may be."

This theory is supported by experiments in which by manipulating the bodily state, a desired emotion is induced. Such experiments also have therapeutic implications (for example, in laughter therapy, dance therapy). Some people may believe that emotions give rise to emotion-specific actions: e.g. "I'm crying because I'm sad," or "I ran away because I was scared." The James-Lange theory, conversely, asserts that first we react to a situation (running away and crying happen before the emotion), and then we interpret our actions into an emotional response. In this way, emotions serve to explain and organize our own actions to us.

The James-Lange theory has now been all but abandoned by most scholars.

Tim Dalgleish (2004) states the following:

The James-Lange theory has remained influential. Its main contribution is the emphasis it places on the embodiment of emotions, especially the argument that changes in the bodily concomitants of emotions can alter their experienced intensity. Most contemporary neuroscientists would endorse a modified James-Lange view in which bodily feedback modulates the experience of emotion." (p. 583)

The issue with the James-Lange theory is that of causation (bodily states causing emotions and being a priori), not that of the bodily influences on emotional experience (which can be argued is still quite prevalent today in biofeedback studies and embodiment theory).

Neurobiological theories

Based on discoveries made through neural mapping of the limbic system, the neurobiological explanation of human emotion is that emotion is a pleasant or unpleasant mental state organized in the limbic system of the mammalian brain. If distinguished from reactive responses of reptiles,

emotions would then be mammalian elaborations of general vertebrate arousal patterns, in which neurochemicals (for example, dopamine, noradrenaline, and serotonin) step-up or step-down the brain's activity level, as visible in body movements, gestures, and postures.

For example, the emotion of love is proposed to be the expression of paleocircuits of the mammalian brain (specifically, modules of the cingulate gyrus) which facilitate the care, feeding, and grooming of offspring. Paleocircuits are neural platforms for bodily expression configured before the advent of cortical circuits for speech. They consist of pre-configured pathways or networks of nerve cells in the forebrain, brain stem and spinal cord.

The motor centers of reptiles react to sensory cues of vision, sound, touch, chemical, gravity, and motion with pre-set body movements and programmed postures. With the arrival of night-active mammals, smell replaced vision as the dominant sense, and a different way of responding arose from the olfactory sense, which is proposed to have developed into mammalian emotion and emotional memory. The mammalian brain invested heavily in olfaction to succeed at night as reptiles slept--one explanation for why olfactory lobes in mammalian brains are proportionally larger than in the reptiles. These odor pathways gradually formed the neural blueprint for what was later to become our limbic brain.

Emotions are thought to be related to certain activities in brain areas that direct our attention, motivate our behavior, and determine the significance of what is going on around us. Pioneering work by Broca (1878), Papez (1937), and MacLean (1952) suggested that emotion is related to a group of structures in the center of the brain called the limbic system, which includes the hypothalamus, cingulate cortex, hippocampi, and other structures. More recent research has shown that some of these limbic structures are not as directly related to emotion as others are, while some non-limbic structures have been found to be of greater emotional relevance.

Prefrontal cortex

There is ample evidence that the left prefrontal cortex is activated by stimuli that cause positive approach. If attractive stimuli can selectively activate a region of the brain, then logically the converse should hold, that selective activation of that region of the brain should cause a stimulus to be judged more positively. This was demonstrated for moderately attractive visual stimuli and replicated and extended to include negative stimuli.

Two neurobiological models of emotion in the prefrontal cortex made opposing predictions. The Valence Model predicted that anger, a negative emotion, would activate the right prefrontal cortex. The Direction Model predicted that anger, an approach emotion, would activate the left prefrontal cortex. The second model was supported.

This still left open the question of whether the opposite of approach in the prefrontal cortex is better

described as moving away (Direction Model), as unmoving but with strength and resistance (Movement Model), or as unmoving with passive yielding (Action Tendency Model). Support for the Action Tendency Model (passivity related to right prefrontal activity) comes from research on shyness and research on behavioral inhibition. Research that tested the competing hypotheses generated by all four models also supported the Action Tendency Model.

Homeostatic/primordial emotion

Another neurological approach distinguishes two classes of emotion. Classical" emotions including love, anger and fear, are evoked by appraisal of scenarios fed by environmental stimuli via distance receptors in the eyes, nose and ears. "Homeostatic" or "primordial" emotions are feelings such as pain, hunger, thirst and fatigue, evoked by internal body states, communicated to the central nervous system by interoceptors, which motivate behavior aimed at maintaining the internal milieu at its ideal state. These demanding sensations that capture conscious attention are coordinated from the lower or basal regions of the brain and impact diverse regions of the brain, including the frontal lobes.

Cognitive theories

Several theories argue that cognitive activity--in the form of judgments, evaluations, or thoughts--is necessary for an emotion to occur. This, argued by Richard Lazarus, is necessary to capture the fact that emotions are about something or have intentionality. Such cognitive activity may be conscious or unconscious and may or may not take the form of conceptual processing.

An influential theory here is that of Lazarus: emotion is a disturbance that occurs in the following order: 1.) Cognitive appraisal--The individual assesses the event cognitively, which cues the emotion. 2.) Physiological changes--The cognitive reaction starts biological changes such as increased heart rate or pituitary adrenal response. 3.) Action--The individual feels the emotion and chooses how to react. For example: Jenny sees a snake. 1.) Jenny cognitively assesses the snake in her presence, which triggers fear. 2.) Her heart begins to race faster. Adrenaline pumps through her blood stream. 3.) Jenny screams and runs away. Lazarus stressed that the quality and intensity of emotions are controlled through cognitive processes. These processes underlie coping strategies that form the emotional reaction by altering the relationship between the person and the environment.

George Mandler provided an extensive theoretical and empirical discussion of emotion as influenced by cognition, consciousness, and the autonomic nervous system in two books (Mind and Emotion, 1975, and Mind and Body: Psychology of Emotion and Stress, 1984)

There are some theories on emotions arguing that cognitive activity in the form of judgements,

evaluations, or thoughts is necessary in order for an emotion to occur. A prominent philosophical exponent is Robert C. Solomon (for example, The Passions, Emotions and the Meaning of Life, 1993). The theory proposed by Nico Frijda where appraisal leads to action tendencies is another example.

It has also been suggested that emotions (affect heuristics, feelings and gut-feeling reactions) are often used as shortcuts to process information and influence behavior. The affect infusion model (AIM) is a theoretical model developed by Joseph Forgas in the early 1990s that attempts to explain how emotion and mood interact with one's ability to process information.

Perceptual theory

A recent hybrid of the somatic and cognitive theories of emotion is the perceptual theory. This theory is neo-Jamesian in arguing that bodily responses are central to emotions, yet it emphasizes the meaningfulness of emotions or the idea that emotions are about something, as is recognized by cognitive theories. The novel claim of this theory is that conceptually-based cognition is unnecessary for such meaning. Rather the bodily changes themselves perceive the meaningful content of the emotion because of being causally triggered by certain situations. In this respect, emotions are held to be analogous to faculties such as vision or touch, which provide information about the relation between the subject and the world in various ways. A sophisticated defense of this view is found in philosopher Jesse Prinz's book Gut Reactions and psychologist James Laird's book Feelings.

Affective events theory

This a communication-based theory developed by Howard M. Weiss and Russell Cropanzano (1996), that looks at the causes, structures, and consequences of emotional experience (especially in work contexts). This theory suggests that emotions are influenced and caused by events which in turn influence attitudes and behaviors. This theoretical frame also emphasizes time in that human beings experience what they call emotion episodes--a "series of emotional states extended over time and organized around an underlying theme." This theory has been utilized by numerous researchers to better understand emotion from a communicative lens, and was reviewed further by Howard M. Weiss and Daniel J. Beal in their article, "Reflections on Affective Events Theory" published in Research on Emotion in Organizations in 2005.

Cannon-Bard theory

In the Cannon-Bard theory, Walter Bradford Cannon argued against the dominance of the James-Lange theory regarding the physiological aspects of emotions in the second edition of Bodily

Changes in Pain, Hunger, Fear and Rage. Where James argued that emotional behavior often precedes or defines the emotion, Cannon and Bard argued that the emotion arises first and then stimulates typical behavior.

Two-factor theory

Another cognitive theory is the Singer-Schachter theory. This is based on experiments purportedly showing that subjects can have different emotional reactions despite being placed into the same physiological state with an injection of adrenaline. Subjects were observed to express either anger or amusement depending on whether another person in the situation displayed that emotion. Hence, the combination of the appraisal of the situation (cognitive) and the participants' reception of adrenaline or a placebo together determined the response. This experiment has been criticized in Jesse Prinz's (2004) Gut Reactions.

Component process model

A recent version of the cognitive theory regards emotions more broadly as the synchronization of many different bodily and cognitive components. Emotions are identified with the overall process whereby low-level cognitive appraisals, in particular the processing of relevance, trigger bodily reactions, behaviors, feelings, and actions.

Disciplinary approaches

Many different disciplines have produced work on the emotions. Human sciences study the role of emotions in mental processes, disorders, and neural mechanisms. In psychiatry, emotions are examined as part of the discipline's study and treatment of mental disorders in humans. Nursing studies emotions as part of its approach to the provision of holistic health care to humans. Psychology examines emotions from a scientific perspective by treating them as mental processes and behavior and they explore the underlying physiological and neurological processes. In neuroscience sub-fields such as social neuroscience and affective neuroscience, scientists study the neural mechanisms of emotion by combining neuroscience with the psychological study of personality, emotion, and mood. In linguistics, the expression of emotion may change to the meaning of sounds. In education, the role of emotions in relation to learning are examined.

Social sciences often examine emotion for the role that it plays in human culture and social interactions. In sociology, emotions are examined for the role they play in human society, social patterns and interactions, and culture. In anthropology, the study of humanity, scholars use ethnography to undertake contextual analyses and cross-cultural comparisons of a range of human activities; some anthropology studies examine the role of emotions in human activities. In the field

of communication sciences, critical organizational scholars have examined the role of emotions in organizations, from the perspectives of managers, employees, and even customers. A focus on emotions in organizations can be credited to Arlie Russell Hochschild's concept of emotional labor. The University of Queensland hosts EmoNet, an e-mail distribution list representing a network of academics that facilitates scholarly discussion of all matters relating to the study of emotion in organizational settings. The list was established in January 1997 and has over 700 members from across the globe.

In economics, the social science that studies the production, distribution, and consumption of goods and services, emotions are analyzed in some sub-fields of microeconomics, in order to assess the role of emotions on purchase decision-making and risk perception. In criminology, a social science approach to the study of crime, scholars often draw on behavioral sciences, sociology, and psychology; emotions are examined in criminology issues such as anomie theory and studies of "toughness," aggressive behavior, and hooliganism. In law, which underpins civil obedience, politics, economics and society, evidence about people's emotions is often raised in tort law claims for compensation and in criminal law prosecutions against alleged lawbreakers (as evidence of the defendant's state of mind during trials, sentencing, and parole hearings). In political science, emotions are examined in a number of sub-fields, such as the analysis of voter decision-making.

In philosophy, emotions are studied in sub-fields such as ethics, the philosophy of art (for example, sensory-emotional values, and matters of taste and sentimentality), and the philosophy of music (see also Music and emotion). In history, scholars examine documents and other sources to interpret and analyze past activities; speculation on the emotional state of the authors of historical documents is one of the tools of interpretation. In literature and film-making, the expression of emotion is the cornerstone of genres such as drama, melodrama, and romance. In communication studies, scholars study the role that emotion plays in the dissemination of ideas and messages. Emotion is also studied in non-human animals in ethology, a branch of zoology which focuses on the scientific study of animal behavior. Ethology is a combination of laboratory and field science, with strong ties to ecology and evolution. Ethologists often study one type of behavior (for example, aggression) in a number of unrelated animals.

Evolutionary psychology

Perspectives on emotions from evolutionary theory were initiated in the late 19th century with Charles Darwin's book The Expression of the Emotions in Man and Animals. Darwin's original thesis was that emotions evolved via natural selection and therefore have cross-culturally universal counterparts. Furthermore, animals undergo emotions comparable to our own (see emotion in animals). In the early 1970s, Paul Ekman and colleagues began a line of research that suggests that many emotions are universal. He found evidence that humans share at least five basic

emotions: fear, sadness, happiness, anger, and disgust. Other research in this area focuses on physical displays of emotion including body language of animals and humans (see affect display). The increased potential in neuroimaging has also allowed investigation into evolutionarily ancient parts of the brain. Important neurological advances were fuk from these perspectives in the 1990s by, for example, Joseph E. LeDoux and António Damásio.

Social emotions evidently evolved to motivate social behaviors that were adaptive in the ancestral environment. For example, spite seems to work against the individual but it can establish an individual's reputation as someone to be feared. Shame and pride can motivate behaviors that help one maintain one's standing in a community, and self-esteem is one's estimate of one's status.

Sociology

We try to regulate our emotions to fit in with the norms of the situation, based on many--sometimes conflicting--demands upon us which originate from various entities studied by sociology on a micro level--such as social roles and "feeling rules" the everyday social interactions and situations are shaped by--and, on a macro level, by social institutions, discourses, ideologies, etc. For example, (post-)modern marriage is, on one hand, based on the emotion of love and on the other hand the very emotion is to be worked on and regulated by it. The sociology of emotions also focuses on general attitude changes in a population. Emotional appeals are commonly found in advertising, health campaigns and political messages. Recent examples include no-smoking health campaigns and political campaign advertising emphasizing the fear of terrorism.

Psychotherapy

Depending on the particular school's general emphasis either on cognitive components of emotion, physical energy discharging, or on symbolic movement and facial expression components of emotion, different schools of psychotherapy approach human emotions differently. Cognitively oriented schools approach them via their cognitive components, such as rational emotive behavior therapy. Yet others approach emotions via symbolic movement and facial expression components (like in contemporary Gestalt therapy).

Computer science

In the 2000s, research in computer science, engineering, psychology and neuroscience has been aimed at developing devices that recognize human affect display and model emotions. In computer science, affective computing is a branch of the study and development of artificial intelligence that deals with the design of systems and devices that can recognize, interpret, and process human emotions. It is an interdisciplinary field spanning computer sciences, psychology, and cognitive

science. While the origins of the field may be traced as far back as to early philosophical enquiries into emotion, the more modern branch of computer science originated with Rosalind Picard's 1995 paper on affective computing. Detecting emotional information begins with passive sensors which capture data about the user's physical state or behavior without interpreting the input. The data gathered is analogous to the cues humans use to perceive emotions in others. Another area within affective computing is the design of computational devices proposed to exhibit either innate emotional capabilities or that are capable of convincingly simulating emotions. Emotional speech processing recognizes the user's emotional state by analyzing speech patterns. The detection and processing of facial expression or body gestures is achieved through detectors and sensors.

Notable theorists

In the late 19th century, the most influential theorists were William James (1842-1910) and Carl Lange (1834-1900). James was an American psychologist and philosopher who wrote about educational psychology, psychology of religious experience/mysticism, and the philosophy of pragmatism. Lange was a Danish physician and psychologist. Working independently, they developed the James-Lange theory, a hypothesis on the origin and nature of emotions. The theory states that within human beings, as a response to experiences in the world, the autonomic nervous system creates physiological events such as muscular tension, a rise in heart rate, perspiration, and dryness of the mouth. Emotions, then, are feelings which come about as a result of these physiological changes, rather than being their cause.

Some of the most influential theorists on emotion from the 20th century have died in the last decade. They include Magda B. Arnold (1903-2002), an American psychologist who developed the appraisal theory of emotions; Richard Lazarus (1922-2002), an American psychologist who specialized in emotion and stress, especially in relation to cognition; Herbert Simon (1916-2001), who included emotions into decision making and artificial intelligence; Robert Plutchik (1928-2006), an American psychologist who developed a psychoevolutionary theory of emotion; Robert Zajonc (1923-2008) a Polish-American social psychologist who specialized in social and cognitive processes such as social facilitation. In addition, an American philosopher, Robert C. Solomon (1942-2007), contributed to the theories on the philosophy of emotions with books such as What Is An Emotion?: Classic and Contemporary Readings (Oxford, 2003).

Influential theorists who are still active include psychologists, neurologists, and philosophers including:

Lisa Feldman Barrett - Social philosopher and psychologist specializing in affective science and human emotion.
John Cacioppo - from the University of Chicago, founding father with Gary Berntson of social neuroscience.

António Damásio (born 1944) - Portuguese behavioral neurologist and neuroscientist who works in the US

Richard Davidson (born 1951) - American psychologist and neuroscientist; pioneer in affective neuroscience.

Paul Ekman (born 1934) - Psychologist specializing in study of emotions and their relation to facial expressions

Barbara Fredrickson - Social psychologist who specializes in emotions and positive psychology.

Nico Frijda (born 1927) - Dutch psychologist who specializes in human emotions, especially facial expressions

Peter Goldie - British philosopher who specializes in ethics, aesthetics, emotion, mood and character

Arlie Russell Hochschild (born 1940) - American sociologist whose central contribution was in forging a link between the subcutaneous flow of emotion in social life and the larger trends set loose by modern capitalism within organizations.

Joseph E. LeDoux (born 1949) - American neuroscientist who studies the biological underpinnings of memory and emotion, especially the mechanisms of fear

George Mandler (born 1924) - American psychologist who wrote influential books on cognition and emotion

Jaak Panksepp (born 1943) - Estonian-born American psychologist, psychobiologist and neuroscientist; pioneer in affective neuroscience.

Jesse Prinz - American philosopher who specializes in emotion, moral psychology, aesthetics and consciousness

Klaus Scherer (born 1943) - Swiss psychologist and director of the Swiss Center for Affective Sciences in Geneva; he specializes in the psychology of emotion

Ronald de Sousa (born 1940) - English-Canadian philosopher who specializes in the philosophy of emotions, philosophy of mind and philosophy of biology.

Click on the topics below to explore further: