Cognitive Dissonance

Cognitive Dissonance In Construction Bookkeepers

Contents

Chapter 1

Cognitive dissonance

In psychology, **cognitive dissonance** is the mental stress or discomfort experienced by an individual who holds two or more contradictory beliefs, ideas, or values at the same time; performs an action that is contradictory to one or more beliefs, ideas, or values; or is confronted by new information that conflicts with existing beliefs, ideas, or values.[1][2]

Leon Festinger's theory of cognitive dissonance focuses on how humans strive for internal consistency. An individual who experiences inconsistency (dissonance) tends to become psychologically uncomfortable, and is motivated to try to reduce this dissonance—as well as actively avoid situations and information likely to increase it.[1]

1.1 Relationship between cognitions

Individuals can adjust their attitudes or actions in various ways. Adjustments result in one of three relationships between two cognitions or between a cognition and a behavior.[1]

Consonant relationship Two cognitions/actions that are consistent with one another (e.g., not wanting to get intoxicated while out, then ordering water instead of alcohol)

Irrelevant relationship Two cognitions/actions that are unrelated to one another (e.g., not wanting to get intoxicated while out, then tying your shoes)

Dissonant relationship Two cognitions/actions that are inconsistent with one another (e.g., not wanting to get intoxicated while out, then consuming a large quantity of alcohol)

1.1.1 Magnitude of dissonance

The amount of dissonance produced by two conflicting cognitions or actions (as well as the subsequent psychological distress) depends on two factors:

1. *The importance of cognitions*: The more the elements are personally valued, the greater the magnitude of the dissonant relationship.
2. *Ratio of cognitions*: The proportion of dissonant to consonant elements

The pressure to reduce cognitive dissonance is a function of the magnitude of this dissonance.[1]

1.2 Reducing

Cognitive dissonance theory is founded on the assumption that individuals seek consistency between their expectations and their reality. Because of this, people engage in a process called "dissonance reduction" to bring their cognitions and actions in line with one another. This creation of uniformity allows for a lessening of psychological tension and distress. According to Festinger, dissonance reduction can be achieved in four ways.[1] In an example case where a person has adopted the attitude that they will no longer eat high fat food, but eats a high-fat doughnut, the four methods of reduction are:

1. Change behavior or cognition ("I will not eat any more of this doughnut")
2. Justify behavior or cognition by changing the conflicting cognition ("I'm allowed to cheat every once in a while")
3. Justify behavior or cognition by adding new cognitions ("I'll spend 30 extra minutes at the gym to work this off")
4. Ignore or deny any information that conflicts with existing beliefs ("This doughnut is not high in fat")

Categorization is used by humans to simplify the world around them. How categorization happens is usually what

is the most noticeable or basic categories; race, gender, and age. Once these groups are identified, a set of attributes (emotions/attitudes) towards that group come into mind as well. These attributes are prejudices (whether positive or negative) and are expectations held over individuals who might not identify with the labeled group.[3]

1.3 Theory and research

Most of the research on cognitive dissonance takes the form of one of four major paradigms. Important research generated by the theory has been concerned with the consequences of exposure to information inconsistent with a prior belief, what happens after individuals act in ways that are inconsistent with their prior attitudes, what happens after individuals make decisions, and the effects of effort expenditure. A key tenet of cognitive dissonance theory is that those who have heavily invested in a position may, when confronted with disconfirming evidence, go to greater lengths to justify their position.

1.3.1 Belief disconfirmation paradigm

Dissonance is felt when people are confronted with information that is inconsistent with their beliefs. If the dissonance is not reduced by changing one's belief, the dissonance can result in restoring consonance through misperception, rejection or refutation of the information, seeking support from others who share the beliefs, and attempting to persuade others.[4][5]

An early version of cognitive dissonance theory appeared in Leon Festinger's 1956 book *When Prophecy Fails*. This book gives an account of the deepening of cult members' faith following the failure of a cult's prophecy that a UFO landing was imminent. The believers met at a predetermined place and time, believing they alone would survive the Earth's destruction. The appointed time came and passed without incident. They faced acute cognitive dissonance: had they been the victim of a hoax? Had they donated their worldly possessions in vain? Most members chose to believe something less dissonant to resolve reality not meeting their expectations: they believed that the aliens had given Earth a second chance, and the group was now empowered to spread the word that Earth-spoiling must stop. The group dramatically increased their proselytism despite (because of) the failed prophecy.[6]

Another example of the belief disconfirmation paradigm is an orthodox Jewish group which believed their Rebbe might be the Messiah. When the Rebbe died of a stroke in 1994, instead of accepting that he was not the Messiah, some of them concluded that he was still the Messiah but would soon be resurrected from the dead.[7] Some have suggested the same process might explain the belief two thousand years ago that Jesus was resurrected from the dead.[8]

1.3.2 Induced-compliance paradigm

See also: Forced compliance theory

In Festinger and Carlsmith's classic 1959 experiment, students were asked to spend an hour on boring and tedious tasks (e.g., turning pegs a quarter turn, over and over again). The tasks were designed to generate a strong, negative attitude. Once the subjects had done this, the experimenters asked some of them to do a simple favour. They were asked to talk to another subject (actually an actor) and persuade the impostor that the tasks were interesting and engaging. Some participants were paid $20 (equivalent to $162 in present-day terms[9]) for this favour, another group was paid $1 (equivalent to $8 in present-day terms[9]), and a control group was not asked to perform the favour.

When asked to rate the boring tasks at the conclusion of the study (not in the presence of the other "subject"), those in the $1 group rated them more positively than those in the $20 and control groups. This was explained by Festinger and Carlsmith as evidence for cognitive dissonance. The researchers theorized that people experienced dissonance between the conflicting cognitions, "I told someone that the task was interesting", and "I actually found it boring." When paid only $1, students were forced to internalize the attitude they were induced to express, because they had no other justification. Those in the $20 condition, however, had an obvious external justification for their behaviour, and thus experienced less dissonance.[10]

In subsequent experiments, an alternative method of inducing dissonance has become common. In this research, experimenters use counter-attitudinal essay-writing, in which people are paid varying amounts of money (e.g., $1 or $10) for writing essays expressing opinions contrary to their own. People paid only a small amount of money have less external justification for their inconsistency, and must produce internal justification to reduce the high degree of dissonance they experience.

A variant of the induced-compliance paradigm is the forbidden toy paradigm. An experiment by Aronson and Carlsmith in 1963 examined self-justification in children.[11] In this experiment, children were left in a room with a variety of toys, including a highly desirable toy steam-shovel (or other toy). Upon leaving the room, the experimenter told half the children that there would be a severe punishment if they played with that particular toy and told the other half that there would be a mild punishment. All of the children

After someone has performed dissonant behavior, they may find external consonant elements. A snake oil salesman may find a justification for promoting falsehoods (e.g., large personal gain), but may otherwise need to change his views about the falsehoods themselves.

in the study refrained from playing with the toy.[11] Later, when the children were told that they could freely play with whatever toy they wanted, the ones in the mild punishment condition were less likely to play with the toy, even though the threat had been removed. The children who were only mildly threatened had to justify to themselves why they did not play with the toy. The degree of punishment by itself was not strong enough—so, to resolve their dissonance, the children had to convince themselves that the toy was not worth playing with.[11]

A 2012 study using a version of the forbidden toy paradigm showed that hearing music reduces the development of cognitive dissonance.[12] With no music playing in the background, the control group of four-year-old children were told to avoid playing with a particular toy. After playing alone, the children later devalued the forbidden toy in their ranking, which is similar findings to earlier studies. However, in the variable group, classical music was played in the background while the children played alone. In that group, the children did not later devalue the toy. The researchers concluded that music may inhibit cognitions that result in dissonance reduction.[12]

Music is not the only example of an outside force lessening post-decisional dissonance; a 2010 study showed that handwashing had a similar effect.[13]

1.3.3 Free-choice paradigm

In a different type of experiment conducted by Jack Brehm, 225 female students rated a series of common appliances and were then allowed to choose one of two appliances to take home as a gift. A second round of ratings showed that the participants increased their ratings of the item they chose, and lowered their ratings of the rejected item.[14]

This can be explained in terms of cognitive dissonance. When making a difficult decision, there are always aspects of the rejected choice that one finds appealing and these features are dissonant with choosing something else. In other words, the cognition, "I chose X" is dissonant with the cognition, "There are some things I like about Y." More recent research has found similar results in four-year-old children and capuchin monkeys.[15]

In addition to internal deliberations, the structuring of decisions among other individuals may play a role in how an individual acts. Researchers in a 2013 study examined social preferences and norms as related, in a linear manner, to wage giving among three individuals. The first participant's actions influenced the second's own wage giving. The researchers argue that inequity aversion is the paramount concern of the participants.[16]

1.3.4 Effort justification paradigm

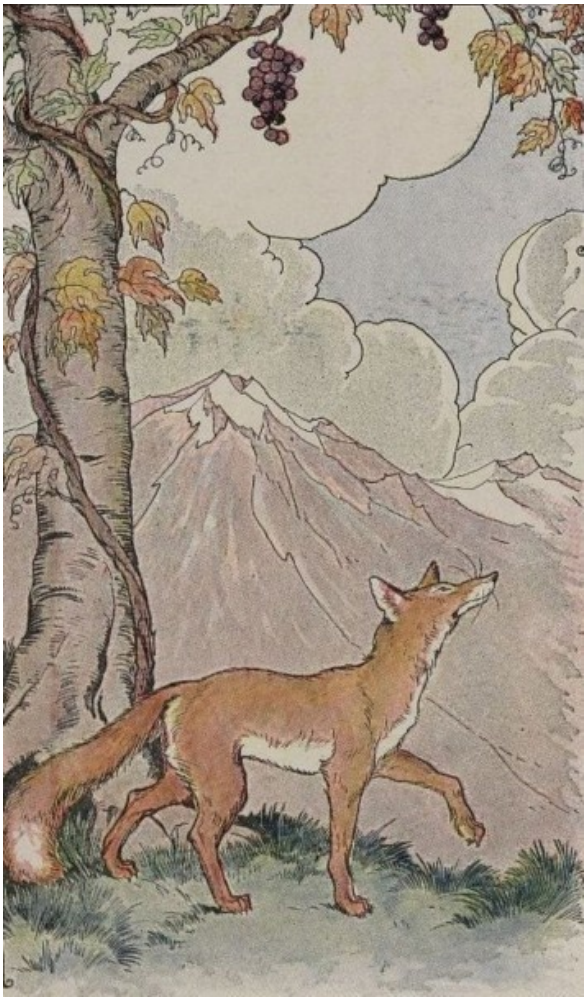
Further information: Effort justification

Dissonance is aroused whenever individuals voluntarily engage in an unpleasant activity to achieve some desired goal, and dissonance can be reduced by exaggerating the desirability of the goal. Aronson & Mills had individuals undergo an embarrassing "initiation" to join a discussion group. One group was asked to read twelve obscene words aloud; the other to read twelve words which were related to sex but not obscene. Both groups were then given headphones to listen in on a pre-recorded discussion "designed to be as dull and banal as possible" about the sexual behavior of animals. Subjects were told that the discussion was occurring in the next room. The individuals whose initiation required obscene words evaluated the group as more interesting than the individuals in the mild-initiation condition.[17]

Effort justification is related to the idea of a sunk cost.

Washing one's hands has been shown to eliminate post-decisional dissonance, presumably because the dissonance is commonly caused by moral disgust (with oneself), which is related to disgust from unsanitary conditions.[18][19]

1.4 Examples



"The Fox and the Grapes" by Aesop. When the fox fails to reach the grapes, he decides he does not want them after all. Rationalization is often involved in reducing anxiety about conflicting cognitions, according to cognitive dissonance theory.

1.4.1 "The Fox and the Grapes"

A classic illustration of cognitive dissonance is expressed in the fable "The Fox and the Grapes" by Aesop (ca. 620–564 BCE). In the story, a fox sees some high-hanging grapes and wishes to eat them. When the fox is unable to think of a way to reach them, he decides that the grapes are probably not worth eating, with the justification that the grapes probably are not ripe or that they are sour (hence the common phrase "sour grapes"). The moral that accompanies the story is "Any fool can despise what he cannot get". This example follows a pattern: one desires something, finds it unattainable, and reduces one's dissonance by criticizing it. Jon Elster calls this pattern "adaptive preference formation".[20]

1.4.2 Other related phenomena

Cognitive dissonance has also been demonstrated to occur when people seek to:

- *Explain inexplicable feelings*: When a disaster occurs in a community, irrationally fearful rumors spread in nearby communities not involved in the disaster because of the need of those who are not threatened to justify their anxieties.[21]
- *Minimize regret of irrevocable choices*: Bettors at a racetrack are more confident in their chosen horse just after placing the bet because they cannot change it (the bettors felt "post-decision dissonance").[22]
- *Justify behavior that opposed their views*: Students judge cheating less harshly after being induced to cheat on a test.[23]
- *Align one's perceptions of a person with one's behaviour toward that person*: the Ben Franklin effect refers to that statesman's observation that the act of performing a favour for a rival leads to increased positive feelings toward that individual.
- *Reaffirm already held beliefs*: Congeniality bias (also referred to as confirmation bias) refers to how people read or access information that affirms their already established opinions, rather than referencing material that contradicts them.[24] For example, a person who is politically right-leaning might only watch news commentary that is from conservative news sources just as left-leaning individuals might only watch news commentary from liberal news sources. This bias is particularly apparent when someone is faced with deeply held beliefs, i.e., when a person has 'high commitment' to their attitudes.[24]

Balance theory suggests people have a general tendency to seek consonance between their views, and the views or characteristics of others (e.g., a religious believer may feel dissonance because their partner does not have the same beliefs as he or she does, thus motivating the believer to justify or rationalize this incongruence). People may self-handicap

so that any failures during an important task are easier to justify (e.g., the student who drinks the night before an important exam in response to his fear of performing poorly).

1.5 Applications of research

In addition to explaining certain counter-intuitive human behaviour, the theory of cognitive dissonance has practical applications in several fields.

1.5.1 Education

An educator might introduce topics by challenging students' intuitions. For instance, a student may be more willing to learn the real cause of the seasons after wrongly guessing that it has something to do with changes in the distance of Earth's orbit from the Sun.

Creating and resolving cognitive dissonance can have a powerful impact on students' motivation for learning.[25] For example, researchers have used the effort justification paradigm to increase students' enthusiasm for educational activities by offering no external reward for students' efforts: preschoolers who completed puzzles with the promise of a reward were less interested in the puzzles later, as compared to preschoolers who were offered no reward in the first place.[26] The researchers concluded that students who can attribute their work to an external reward stop working in the absence of that reward, while those who are forced to attribute their work to intrinsic motivation came to find the task genuinely enjoyable.

Psychologists have incorporated cognitive dissonance into models of basic processes of learning, notably constructivist models. Several educational interventions have been designed to foster dissonance in students by increasing their awareness of conflicts between prior beliefs and new information (e.g., by requiring students to defend prior beliefs) and then providing or guiding students to new, correct explanations that resolve the conflicts.[27]

For example, researchers have developed educational software that uses these principles to facilitate student questioning of complex subject matter.[28] Meta-analytic methods suggest that interventions which provoke cognitive dissonance to achieve directed conceptual change, have been demonstrated across numerous studies to significantly increase learning in science and reading.[27]

1.5.2 Therapy

The general effectiveness of psychotherapy and psychological intervention has been explained in part through cognitive dissonance theory.[29] Some social psychologists have argued that the act of freely choosing a specific therapy, together with the effort and money the client invests to continue the chosen therapy, positively influences the effectiveness of therapy.[30] This phenomenon was demonstrated in a study with overweight children, in which causing the children to believe that they freely chose the type of therapy they received resulted in greater weight loss.[31]

In another example, individuals with ophidiophobia (fear of snakes) who invested significant effort to engage in activities without therapeutic value for their condition, but were framed as legitimate and relevant therapy, showed significant improvement in phobic symptoms.[32] In these cases, and perhaps in many similar situations, patients came to feel better as a way to justify their efforts and ratify their choices. Beyond these observed short-term effects, effort expenditure in therapy also predicts long-term therapeutic change.[33]

1.5.3 Promoting healthy and pro-social behavior

It has also been demonstrated that cognitive dissonance can be used to promote behaviours such as increased condom use.[34] Other studies suggest that cognitive dissonance can also be used to encourage individuals to engage in prosocial behaviour under various contexts such as campaigning against littering,[35] reducing prejudice to racial minorities,[36] and compliance with anti-speeding campaigns.[37] The theory can also be used to explain reasons for donating to charity.[38][39]

1.5.4 Consumer behavior

Existing literature suggests that three main conditions exist for arousal of dissonance in purchases: the decision involved in the purchase must be important, such as involve-

ment of a lot of money or psychological cost and be personally relevant to the consumer, the consumer has freedom in selecting among the alternatives, and finally, the decision involvement must be irreversible.[40]

A study performed by Lindsay Mallikin shows that when consumers experience an unexpected price encounter, they adopt three methods to reduce dissonance:[41] Consumers may employ a strategy of constant information, they may have a change in attitude, or they may engage in trivialization. Consumers employ the strategy of constant information by engaging in bias and searching for information that supports their prior beliefs. Consumers might search for information about other retailers and substitute products consistent with their belief states. Alternatively, consumers may show change in attitude such as reevaluating price in relation to external reference prices or associating high or low prices with quality. Lastly, trivialization may occur and the importance of the elements of the dissonant relationship is reduced; consumers tend to trivialize importance of money, and thus of shopping around, saving, and receiving a better deal.

Cognitive dissonance is also useful to explain and manage post-purchase concerns. A consumer who feels an alternate purchase would have been better will likely not buy the product again. To counter this, marketers have to convince buyers constantly that the product satisfies their need and thereby helps reduce their cognitive dissonance, ensuring repurchase of the same brand in the future. An example of post-purchase dissonance resolution used in a client relation is a salesperson congratulating his buyer on "having made the right choice".

At times cognitive dissonance is induced, rather than resolved, to market products. The Hallmark Cards tag line "When you care enough to send the very best" is an example of a marketing strategy that creates guilt in the buyer if he or she goes for a less expensive card. Such aggressive marketing ensures that the recipient also is aware that the product has a premium price. This encourages the consumer to buy the expensive cards on special occasions.

1.5.5 Social engineering

Social engineering as applied to security is the exploitation of various social and psychological weaknesses in individuals and business structures, sometimes for penetration testing but more often for nefarious purposes, such as espionage against businesses, agencies, and individuals, typically toward the end of obtaining some illegal gain, either of useful but restricted or private information or for monetary gain through such methods as phishing to obtain banking account access, or for purposes of identity theft, blackmail, and so forth. Exploitation of weaknesses caused by inducing cognitive dissonance in targets is one of the techniques used by perpetrators.

1.6 Challenges and alternative theories

A lawyer may experience the negative tension of dissonance if they must defend, and call "innocent", a client that they think is actually guilty. On Aronson's view, however, the lawyer may feel dissonance specifically because falsely calling the defendant "innocent" conflicts with the lawyer's own self-concept of being an honest person.

While cognitive dissonance theory has been utilized in experiments and is generally (although not entirely) accepted by those in the psychology field, there are alternative theories that account for human attitudes and behaviors.

1.6.1 Self-perception theory (Bem)

Daryl Bem was an early critic of cognitive dissonance theory. He proposed self-perception theory as a more parsimonious alternative explanation of the experimental results. According to Bem, people do not think much about their attitudes, let alone whether they are in conflict. Bem's self-perception theory functions under the notion that people develop attitudes by observing their own behavior and concluding what attitudes caused it. This is particularly true

when internal cues are weak or ambiguous. Individuals are in the same position as an observer—meaning they must rely on external cues to infer their own inner state. Self-perception theory suggests people adopt attitudes without accessing internal cognition and mood states.[42]

Bem interpreted people in the Festinger and Carlsmith study or the induced-compliance paradigm as inferring their attitudes from their behavior. Thus, when asked "Did you find the task interesting?" they decided that they must have found it interesting because that is what they told someone. Bem suggested that people who were paid $20 had a salient, external incentive for their behavior and were likely to perceive the money as their reason for saying the task was interesting, rather than concluding that they actually found it interesting.[43][44]

In many experimental situations, Bem's theory and Festinger's dissonance theory make identical predictions, but only dissonance theory predicts the presence of unpleasant tension or arousal. Lab experiments have verified the presence of arousal in dissonance situations.[45][46] This provides support for cognitive dissonance theory and makes it unlikely that self-perception by itself can account for all the laboratory findings.

In 1969, Elliot Aronson reformulated the theory by linking it to the self-concept, clarifying that cognitive dissonance arises from conflicts between cognitions when those conflicts threaten a person's normally positive self-image. Thus, Aronson reinterpreted the findings of the original Festinger and Carlsmith study using the induced-compliance paradigm, stating that the dissonance was between the cognition, "I am an honest person" and the cognition, "I lied to someone about finding the task interesting."[47] Other psychologists have argued that maintaining cognitive consistency is a way to protect public self-image, rather than private self-concept.[48] However, a recent result[49] seems to rule out such an explanation by showing revaluation of items following a choice even when people have forgotten their choices.

1.6.2 Balance theory ("P-O-X" Theory) (Heider)

Main article: Balance theory

Fritz Heider proposed a motivational theory of attitude change that functions on the idea that humans are driven to establish and maintain psychological balance. This drive is known as the consistency motive—the urge to maintain one's values and beliefs over time. According to balance theory there are three things interacting: (1) you (P), (2) another person (O), and (3) an element (X). These are each positioned at one point of a triangle and share two relations:[42]

1. *Unit relations* – things and people that belong together based on similarity, proximity, fate, etc.
2. *Sentiment relations* – evaluations of people and things (liking, disliking)

As individuals, we seek a balanced state with harmonious relations between the three positions (3 positive or 2 negative, 1 positive):

P = you O = John X = John's dog

> "I don't like John"
> "John has a dog"
> "I don't like the dog either"

We also avoid unbalanced states (3 negatives or 2 positive, 1 negative)

P = you O = your child X = picture your child drew

> "I love my child"
> "She drew me this picture"
> "I love this picture"

1.6.3 Cost-benefit analysis (Dupuit)

Jules Dupuit claims behaviors and cognitions can be understood from an economic standpoint such that individuals engage in the systematic processing and comparison of the costs and benefits of a decision. This process helps justify and assess the feasibility of a decision and provides a basis for comparison (determining if the benefits outweigh the costs and to what extent). Although this analysis works well in economic situations, humans are inefficient when it comes to comparing costs and benefits.[50]

1.6.4 Self-discrepancy theory (Higgins)

E. Tory Higgins proposed that individuals have three selves that they compare themselves to:

1. *Actual self* – representation of the attributes you believe you actually possess (basic self-concept)
2. *Ideal self* – attributes you would ideally like to possess (hopes, aspiration, what motivates you to change/improve)
3. *Ought self* – attributes you believe you should possess (duties, obligations, responsibilities)

When these self-guides are contradictory they result in emotional discomfort. Individuals are motivated to reduce self-discrepancy (the gap between two self-guides).[51]

1.6.5 Averse consequences vs. inconsistency (Cooper & Fazio)

During the 1980s, Cooper and Fazio argued that dissonance was caused by aversive consequences, rather than inconsistency. According to this interpretation, the belief that lying is wrong and hurtful, not the inconsistency between cognitions, is what makes people feel bad.[52] Subsequent research, however, found that people experience dissonance even when they feel they have not done anything wrong. For example, Harmon-Jones and colleagues showed that people experience dissonance even when the consequences of their statements are beneficial—as when they convince sexually active students to use condoms, when they, themselves are not using condoms.[53]

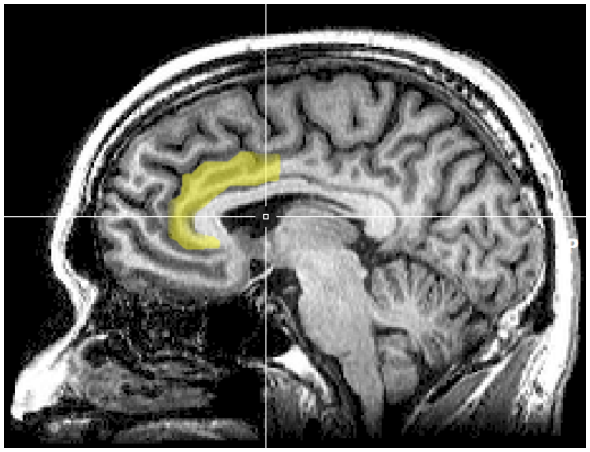
1.6.6 Free-choice paradigm criticism (Chen et al.)

Chen and colleagues have criticized the free-choice paradigm and have suggested that the "Rank, choice, rank" method of studying dissonance is invalid.[54] They argue that research design relies on the assumption that if the subject rates options differently in the second survey, then the subject's attitudes towards the options have therefore changed. They show that there are other reasons one might get different rankings in the second survey — perhaps the subjects were largely indifferent between choices. Although some follow-up studies have found supportive evidence for Chen's concerns,[55] other studies that have controlled for Chen's concerns have not, instead suggesting that the mere act of making a choice can indeed change preferences.[15][56][57] Nevertheless, this issue remains under active investigation.[58]

1.6.7 Action and/or motivation based model (Harmon-Jones)

This model states that inconsistencies in cognitions make people distressed since inconsistencies can interfere with actions. A number of cognitive strategies are then implemented. One may "freely" choose to act in behaviors that are not consistent with a current attitude or belief, but later try to alter their belief to match a current behavior. Dissonance occurs because cognitions do not match actions. If one changes one's attitude after dissonance occurs, one then has an obligation to commit to the behavior. When dissonance happens, the person has a negative affective state that makes them reconsider their behavior to solve the inconsistency that is the problem (Beckmann and Kuhl, 1984, Harmon-Jones, 1999, Harmon-Jones, 2000a, Jones and Gerard, 1967, McGregor et al., 1999 and Newby-Clark et al., 2002).) As a person works towards a commitment, then the motivational process is activated in the left frontal cortex.[59][60][61][62][63]

1.7 Neuroscience findings



There is evidence suggesting that the more the anterior cingulate cortex signals conflict, the more dissonance a person experiences and the more their attitudes may change

Using functional magnetic resonance imaging (fMRI), Van Veen and colleagues investigated the neural basis of cognitive dissonance in a modified version of the classic induced compliance paradigm. While in the scanner, participants "argued" that the uncomfortable MRI environment was nevertheless a pleasant experience. The researchers replicated the basic induced compliance findings; participants in an experimental group enjoyed the scanner more than participants in a control group who simply were paid to make their argument.[64]

Importantly, responding counter-attitudinally activated the dorsal anterior cingulate cortex and the anterior insular cortex; furthermore, the degree to which these regions were activated predicted individual participants' degree of attitude change. Van Veen and colleagues argue that these findings support the original dissonance theory by Festinger, and support the "conflict theory" of anterior cingulate functioning.[64]

Using the free choice paradigm, Sharot and colleagues have shown that after making a choice, activity in the striatum changes to reflect the new evaluation of the choice object, increasing if the object was chosen and decreasing if it was

rejected.[65] Follow-up studies have largely confirmed these results.[56][66][67]

Subsequent fMRI studies, also using the free choice paradigm, have examined the decision-making process in the brain. A 2010 study showed that during decision-making processes where the participant is trying to reduce dissonance, activity increased in the right-inferior frontal gyrus, medial fronto-parietal region and ventral striatum, whereas activity decreased in the anterior insula.[67] Researchers concluded that rationalization activity may take place quickly (within seconds) without conscious deliberation. In addition, the researchers stated that the brain may engage emotional responses in the decision-making process.[67]

Cognitive dissonance has been associated with left frontal activity in the cortex (Harmon-Jones, 1999 and Harmon-Jones and Harmon-Jones, 2002). In addition, the left frontal cortex has been associated with anger, with anger supporting a motivational purpose behind its anger showing the left frontal activity being active. Together, cognitive dissonance and anger are supported with the motivational directional model. Approach motivation is associated with the left frontal cortex when it can be detected that a person may able to take control of a situation that may have made them angry. Conversely, if a person does not have control of changing the situation, then there is no motivation involved and other emotions may arise.[60][68][69]

The anterior cingulate cortex activity increases when errors occur and are being monitored as well as having behavioral conflicts with the self-concept as a form of higher-level thinking (Amodio et al., 2004). A study was done to test the prediction that the left frontal cortex would have increased activity. University students had to write a paper depending on if they were assigned to a high-choice or low-choice condition. The low-choice condition required student to write about supporting a 10% increase in tuition at their university. The point of this condition was to see how significant the counterchoice may affect a person's ability to cope. The high-choice condition asked students to write in favor of tuition increase as if it was their choice and that it was completely voluntary. EEG was used to analyze students before writing the essay as dissonance is at its highest during this time (Beauvois and Joule, 1996). High-choice condition participants showed a higher level of the left frontal cortex than the low-choice participants. Results have shown that the initial experience of dissonance can be apparent in the anterior cingulate cortex, then the left frontal cortex is activated, which also activates the approach motivational system to reduce anger.[70][71]

There may be evolutionary forces behind cognitive dissonance reduction. Researchers in a 2007 study examined how preschool children and capuchin monkeys reacted when offered the choice between two similar options. The researchers had the two subject groups choose between two different kinds of stickers and candies. After choosing, the two groups were offered a new choice between the item not chosen and a similarly attractive option as the first. In line with cognitive dissonance theory, the children and the monkeys chose the "novel" option over their originally unchosen option, even though all had similar values. The researchers concluded that there were possible development and evolutionary forces behind cognitive dissonance reduction.[72]

1.8 Modeling in neural networks

Neural network models of cognition have provided the necessary framework to integrate the empirical research done on cognitive dissonance and attitudes into one model of explanation of attitude formation and change.[73]

Various neural network models have been developed to predict how cognitive dissonance influence an individual's attitude and behavior. These include:

- Parallel constraint satisfaction processes[73]
- The meta-cognitive model (MCM) of attitudes[74]
- Adaptive connectionist model of cognitive dissonance[75]
- Attitudes as constraint satisfaction model[76]

1.9 See also

- Affective forecasting
- Ambivalence, particularly the reference to *The agony of ambivalence and ways to resolve it*,[77] Love–hate relationship, Psychoanalytic concepts of love and hate, and Splitting (psychology)
- Antiprocess
- Belief perseverance
- Buyer's remorse is a form of post-decision dissonance.
- Carnism
- Choice-supportive bias is a memory bias that makes past choices seem better than they actually were.
- Cognitive bias
- Cognitive distortion
- Cognitive inertia

- Compartmentalization (psychology)
- Cultural dissonance is dissonance on a larger scale.
- Double bind is a communicative situation where a person receives different or contradictory messages.
- Double consciousness is conceiving of one's self both as itself and as society's image of it.
- Doublethink is a concept present in George Orwell's Nineteen Eighty-Four that allows a person to hold two contradictory ideas simultaneously and accept both of them as correct.
- Effort justification is the tendency to attribute a greater (than objective) value to an outcome that demands a great effort to resolve a dissonance.
- Emotional conflict is the presence in the subconscious of different and opposing emotions concerning the same situation.
- The Great Disappointment of 1844 is an example of cognitive dissonance in a religious context.
- Illusion-of-truth effect states that a person is more likely to believe a familiar statement than an unfamiliar one.
- Information overload
- Liminality
- Limit situation
- Metanoia (psychology)
- Narcissistic rage and narcissistic injury
- Rationalization (making excuses)
- Shame
- Speciesism
- Techniques of neutralization
- Terror management theory
- True-believer syndrome demonstrates carrying a post-cognitive-dissonance belief regardless of new information.
- Wishful thinking
- Memory conformity

1.10 References

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1.11 Further reading

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1.12 External links

- Cognitive dissonance entry in *The Skeptic's Dictionary*
- Festinger and Carlsmith's original paper
- Leon Festinger, An Introduction to the Theory of Cognitive Dissonance (1956)

Videos

- TEDxTalk by Ash Donaldson on cognitive dissonance and how it affects decision-making on YouTube
- Song by Brad Wray "Cognitive Dissonance (Dissonant and Justified)" on YouTube
- Dummiez Movie: Cognitive Dissonance Theory on YouTube

Chapter 2

Motivation

Motivation is a theoretical construct used to explain behavior. It gives the reasons for people's actions, desires, and needs. Motivation can also be defined as one's direction to behavior, or what causes a person to want to repeat a behavior and vice versa.[1] A motive is what prompts the person to act in a certain way, or at least develop an inclination for specific behavior.[2] According to Maehr and Meyer, "Motivation is a word that is part of the popular culture as few other psychological concepts are."[3]

2.1 Types of theories and models

Motivation theories can be classified on a number of bases.

- Natural vs. Rational based on whether the underlying theory of human Cognition is based on natural forces (drives, needs, desires) or some kind of rationality (instrumentality, meaningfulness, self-identity).
- Content vs. Process based on whether the focus is on the content ("what") motivates vs process ("how") motivation takes place.

2.2 Psychological theories

Motivation can be conceived of as a cycle in which thoughts influence behaviors, behaviors drive performance, performance affects thoughts, and the cycle begins again. Each stage of the cycle is composed of many dimensions including attitudes, beliefs, intentions, effort, and withdrawal which can all affect the motivation that an individual experiences.

2.2.1 Rational motivations

The ideal that human beings are rational and human behavior is guided by reason is an old one. However, recent research (on Satisficing for example) has significantly undermined the idea of homo economicus or of perfect rationality in favour of a more bounded rationality. The field of behavioural economics is particularly concerned with the limits of rationality in economic agents.[4]

2.2.2 Incentive theories: intrinsic and extrinsic motivation

Motivation can be divided into two different theories known as Intrinsic (internal) motivation and Extrinsic (external) motivation.

Intrinsic motivation

Intrinsic motivation has been studied since the early 1970s. Intrinsic motivation is the self-desire to seek out new things and new challenges, to analyze one's capacity, to observe and to gain knowledge.[5] It is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on external pressures or a desire for consideration. The phenomenon of intrinsic motivation was first acknowledged within experimental studies of animal behavior. In these studies, it was evident that the organisms would engage in playful and curiosity driven behaviors in the absence of reward. Intrinsic motivation is a natural motivational tendency and is a critical element in cognitive, social, and physical development.[6] Students who are intrinsically motivated are more likely to engage in the task willingly as well as work to improve their skills, which will increase their capabilities.[7] Students are likely to be intrinsically motivated if they:

- attribute their educational results to factors under their own control, also known as autonomy or locus of control
- believe they have the skills to be effective agents in reaching their desired goals, also known as self-efficacy beliefs

- are interested in mastering a topic, not just in achieving good grades

An example of intrinsic motivation is when an employee becomes an IT professional because he or she wants to learn about how computer users interact with computer networks. The employee has the intrinsic motivation to gain more knowledge.[8]

Traditionally, researchers thought of motivations to use computer systems to be primarily driven by extrinsic purposes; however, many modern systems have their use driven primarily by intrinsic motivations.[9] Examples of such systems used primarily to fulfil users' intrinsic motivations, include on-line gaming, virtual worlds, online shopping, learning/education, online dating, digital music repositories, social networking, online pornography, gamified systems, and general gamification. Even traditional management information systems (e.g., ERP, CRM) are being 'gamified' such that both extrinsic and intrinsic motivations must increasingly be considered.

Advantages: Intrinsic motivation can be long-lasting and self-sustaining. Efforts to build this kind of motivation are also typically efforts at promoting student learning. Such efforts often focus on the subject rather than rewards or punishments.

Disadvantages: Efforts at fostering intrinsic motivation can be slow to affect behavior and can require special and lengthy preparation. Students are individuals, so a variety of approaches may be needed to motivate different students. It is often helpful to know what interests one's students in order to connect these interests with the subject matter. This requires getting to know one's students. Also, it helps if the instructor is interested in the subject.[10]

Extrinsic motivation

Extrinsic motivation refers to the performance of an activity in order to attain a desired outcome and it is the opposite of intrinsic motivation.[5] Extrinsic motivation comes from influences outside of the individual. In extrinsic motivation, the harder question to answer is where do people get the motivation to carry out and continue to push with persistence. Usually extrinsic motivation is used to attain outcomes that a person wouldn't get from intrinsic motivation.[11] Common extrinsic motivations are rewards (for example money or grades) for showing the desired behavior, and the threat of punishment following misbehavior. Competition is an extrinsic motivator because it encourages the performer to win and to beat others, not simply to enjoy the intrinsic rewards of the activity. A cheering crowd and the desire to win a trophy are also extrinsic incentives.[12]

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.[13] However, another study showed that third graders who were rewarded with a book showed more reading behavior in the future, implying that some rewards do not undermine intrinsic motivation.[14] While the provision of extrinsic rewards might reduce the desirability of an activity, the use of extrinsic constraints, such as the threat of punishment, against performing an activity has actually been found to increase one's intrinsic interest in that activity. In one study, when children were given mild threats against playing with an attractive toy, it was found that the threat actually served to increase the child's interest in the toy, which was previously undesirable to the child in the absence of threat.[15]

2.2.3 Behaviorist theories

While many theories on motivation have a mentalistic perspective, behaviorists focus only on observable behavior and theories founded on experimental evidence. In the view of behaviorism, motivation is understood as a question about what factors cause, prevent, or withhold various behaviors, while the question of, for instance, conscious motives would be ignored. Where others would speculate about such things as values, drives, or needs, that may not be observed directly, behaviorists are interested in the observable variables that affect the type, intensity, frequency and duration of observable behavior. Through the basic research of such scientists as Pavlov, Watson and Skinner, several basic mechanisms that govern behavior have been identified. The most important of these are classical conditioning and operant conditioning.

Classical and operant conditioning

In classical (or respondent) conditioning, behavior is understood as responses triggered by certain environmental or physical stimuli. They can be *unconditioned*, such as in-born reflexes, or learned through the pairing of an unconditioned stimulus with a different stimulus, which then becomes a conditioned stimulus. In relation to motivation, classical conditioning might be seen as one explanation as to why an individual performs certain responses and behaviors in certain situations.[16][17] For instance, a dentist might wonder why a patient does not seem motivated to show up for an appointment, with the explanation being that the patient has associated the dentist (conditioned stimulus) with the pain (unconditioned stimulus) that elicits a fear response

(conditioned response), leading to the patient being reluctant to visit the dentist.

In operant conditioning, the type and frequency of behavior is determined mainly by its consequences. If a certain behavior, in the presence of a certain stimulus, is followed by a desirable consequence (a reinforcer), the emitted behavior will increase in frequency in the future, in the presence of the stimulus that preceded the behavior (or a similar one). Conversely, if the behavior is followed by something undesirable (a punisher), the behavior is less likely to occur in the presence of the stimulus. In a similar manner, removal of a stimulus directly following the behavior might either increase or decrease the frequency of that behavior in the future (negative reinforcement or punishment).[16][17] For instance, a student that gained praise and a good grade after turning in a paper, might seem more motivated in writing papers in the future (positive reinforcement); if the same student put in a lot of work on a task without getting any praise for it, he or she might seem less motivated to do school work in the future (negative punishment). If a student starts to cause trouble in class gets punished with something he or she dislikes, such as detention (positive punishment), that behavior would decrease in the future. The student might seem more motivated to behave in class, presumably in order to avoid further detention (negative reinforcement).

The strength of reinforcement or punishment is dependent on schedule and timing. A reinforcer or punisher affects the future frequency of a behavior most strongly if it occurs within seconds of the behavior. A behavior that is reinforced intermittently, at unpredictable intervals, will be more robust and persistent, compared to one that is reinforced every time the behavior is performed.[16][17] For example, if the misbehaving student in the above example was punished a week after the troublesome behavior, that might not affect future behavior. Instead, whatever behavior the student was performing just prior to the punishment would instead decrease.

In addition to these basic principles, antecedent factors also affect behavior. Behavior is punished or reinforced in the context of whatever stimuli were present just before the behavior was performed, which means that a particular behavior might not be affected in every context, just because it was punished or reinforced in a particular one.[16][17] A lack of praise for school-related behavior might, for instance, not decrease sports-related behavior usually reinforced by praise.

The various mechanisms of operant conditioning may be used to understand the motivation for various behaviors by examining what happens just after the behavior (the consequence), in what context the behavior is performed or not performed (the antecedent), and under what circumstances (motivating operators).[16][17]

Motivating operations

Motivating operations, MOs, relate to the field of motivation in that they help improve understanding aspects of behavior that are not covered by operant conditioning. In operant conditioning, the function of the reinforcer is to influence *future behavior*. The presence of a stimulus believed to function as a reinforcer does not according to this terminology explain the current behavior of an organism – only previous instances of reinforcement of that behavior (in the same or similar situations) do. Through the behavior-altering effect of MOs, it is possible to affect current behavior of an individual, giving another piece of the puzzle of motivation.

Motivating operations are factors that affect learned behavior in a certain context. MOs have two effects: a **value-altering effect**, which increases or decreases the efficiency of a reinforcer, and a **behavior-altering effect**, which modifies learned behavior that has previously been punished or reinforced by a particular stimulus.[16]

When a motivating operation causes an increase in the effectiveness of a reinforcer, or amplifies a learned behavior in some way (such as increasing frequency, intensity, duration or speed of the behavior), it functions as an **establishing operation, EO**. A common example of this would be food deprivation, which functions as an EO in relation to food: the food-deprived organism will perform behaviors previously related to the acquisition of food more intensely, frequently, longer, or faster in the presence of food, and those behaviors would be especially strongly reinforced.[16] For instance, a fast-food worker earning minimal wage, forced to work more than one job to make ends meet, would be highly motivated by a pay raise, because of the current deprivation of money (a conditioned establishing operation). The worker would work hard to try to achieve the raise, and getting the raise would function as an especially strong reinforcer of work behavior.

Conversely, a motivating operation that causes a decrease in the effectiveness of a reinforcer, or diminishes a learned behavior related to the reinforcer, functions as an **abolishing operation, AO.** Again using the example of food, satiation of food prior to the presentation of a food stimulus would produce a decrease on food-related behaviors, and diminish or completely abolish the reinforcing effect of acquiring and ingesting the food.[16] Consider the board of a large investment bank, concerned with a too small profit margin, deciding to give the CEO a new incentive package in order to motivate him to increase firm profits. If the CEO already has a lot of money, the incentive package might not be a very good way to motivate him, because

he would be satiated on money. Getting even more money wouldn't be a strong reinforcer for profit-increasing behavior, and wouldn't elicit increased intensity, frequency or duration of profit-increasing behavior.

Motivation and psychotherapy

Motivation lies at the core of many behaviorist approaches to psychological treatment. A person with autism-spectrum disorder is seen as lacking motivation to perform socially relevant behaviors – social stimuli are not as reinforcing for people with autism compared to other people. Depression is understood as a lack of reinforcement (especially positive reinforcement) leading to extinction of behavior in the depressed individual. A patient with specific phobia is not motivated to seek out the phobic stimulus because it acts as a punisher, and is over-motivated to avoid it (negative reinforcement). In accordance, therapies have been designed to address these problems, such as EIBI and CBT for major depression and specific phobia.

Incentive theory

Incentive theory is a specific theory of motivation, derived partly from behaviorist principles of reinforcement, which concerns an incentive or motive to do something. The most common incentive would be a reward. Rewards can be tangible or intangible, and is presented generally after the occurrence of the action or behavior that one is trying to correct or cause to happen again. This is done by associating positive meaning to the behavior and or action. Studies show that if the person receives the reward immediately, the effect is greater, and decreases as delay lengthens.[18] Repetitive action-reward combination can cause the action to become a habit.[18] Motivation comes from two sources: oneself, and other people. (Refer to Intrinsic and Extrinsic motivation for more information)

"Reinforcers and reinforcement principles of behavior differ from the hypothetical construct of reward." A reinforcer is anything that follows an action, with the intentions that the action will now occur more frequently. From this perspective, the concept of distinguishing between intrinsic and extrinsic forces is irrelevant.

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. Incentive theory is especially supported by Skinner in his philosophy of Radical behaviorism, meaning that a person's actions always has 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 theory distinguishes itself from other motivation theories, such as drive theory, in the direction of the motivation. In incentive theory, stimuli "attract", a person towards them, and push them towards the stimulus. In terms of behaviorism, incentive theory involves positive reinforcement: the reinforcing stimulus has been conditioned to make the person 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.[18]

2.2.4 Push and pull

Push motivations are those where people push themselves towards their goals or to achieve something, such as the desire for escape, rest and relaxation, prestige, health and fitness, adventure, and social interaction.[19] However, with push motivation it's also easy to get discouraged when there are obstacles present in the path of achievement. Push motivation acts as a willpower and people's willpower is only as strong as the desire behind the willpower.[20] Additionally, a study has been conducted on social networking and its push and pull effects. One thing that is mentioned is "Regret and dissatisfaction correspond to push factors because regret and dissatisfaction are the negative factors that compel users to leave their current service provider."[21] So from reading this, we now know that Push motivations can also be a negative force. In this case, that negative force is regret and dissatisfaction.

Pull motivation is the opposite of push. It is a type of motivation that is much stronger. "Some of the factors are those that emerge as a result of the attractiveness of a destination as it is perceived by those with the propensity to travel. They include both tangible resources, such as beaches, recreation facilities, and cultural attractions, and traveler's perceptions and expectation, such as novelty, benefit expectation, and marketing image."[19] Pull motivation can be seen as the desire to achieve a goal so badly that it seems that the goal is pulling us toward it. That is why pull motivation is stronger than push motivation. It is easier to be drawn to something rather than to push yourself for something you desire. It can also be an alternative force when compared to negative force. From the same study as previously mentioned, "Regret and dissatisfaction with an existing SNS service provider may trigger a heightened interest toward switching service providers, but such a motive will likely to translate into reality in the presence of good alternative. Therefore, alternative attractiveness can moderate the effects of regret

and dissatisfaction with switching intention"[21] And so, pull motivation can be an attracting desire when negative influences come into the picture.

2.2.5 Self-control

Main article: Self-control

The self-control aspect of motivation is increasingly considered to be a subset of emotional intelligence;[22] it is suggested that although a person may be classed as highly intelligent (as measured by many traditional intelligence tests), they may remain unmotivated to pursue intellectual endeavours. Vroom's "expectancy theory" provides an account of when people may decide to exert self-control in pursuit of a particular goal.

2.2.6 Drives

Main article: Drive theory

A drive or desire can be described as *a deficiency or need that activates behavior that is aimed at a goal or an incentive*.[23] These drives 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. Another basic drive is the sexual drive which like food motivates us because it is essential to our survival.[24] The desire for sex is wired deep into the brain of all human beings as glands secrete hormones that travel through the blood to the brain and stimulates the onset of sexual desire.[24] The hormone involved in the initial onset of sexual desire is called Dehydroepiandrosterone (DHEA).[24] The hormonal basis of both men and women's sex drives is testosterone.[24] Men naturally have more testosterone than women do and so are more likely than woman to think about sex.[24]

2.2.7 Drive-reduction theory

Drive theory grows out of the concept that people have certain biological drives, such as hunger and thirst. 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. Created by Clark Hull and further developed by Kenneth Spence, the theory became well known in the 1940s and 1950s. Many of the motivational theories that arose during the 1950s and 1960s were either based on Hull's original theory or were focused on providing alternatives to the drive-reduction theory, including Abraham Maslow's hierarchy of needs, which emerged as an alternative to Hull's approach.[25]

Clark Hull was the behaviorist who developed the drive-reduction theory of motivation.

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.[26] There are several problems, however, that leave the validity of drive reduction open for debate.

2.2.8 Cognitive dissonance theory

Main article: Cognitive dissonance

Suggested by Leon Festinger, cognitive dissonance occurs when an individual experiences some degree of discomfort resulting from an inconsistency between two cognitions: their views on the world around them, and their own personal feelings and actions.[18] For example, a consumer may seek to reassure themselves regarding a purchase, feeling that another decision may have been preferable. Their feeling that another purchase would have been preferable is inconsistent with their action of purchasing the item. The

difference between their feelings and beliefs causes dissonance, so they seek to reassure themselves.

While not a theory of motivation, per se, the theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance. The cognitive miser perspective makes people want to justify things in a simple way in order to reduce the effort they put into cognition. They do this by changing their attitudes, beliefs, or actions, rather than facing the inconsistencies, because dissonance is a mental strain. Dissonance is also reduced by justifying, blaming, and denying. It is one of the most influential and extensively studied theories in social psychology.

2.2.9 Content theories

The content theory was one of the earliest theories of motivation. Content theories can also be referred to needs theories, because the theory focuses on the importance of what motivates us (needs). In other words, they try to identify what our "needs" are and how they relate to motivation to fulfill those needs. Another definition could be defined by Pritchard and Ashwood, is the process used to allocate energy to maximize the satisfaction of needs.[27]

Maslow's hierarchy of needs

- Maslow's Pyramid

Content theory of human motivation includes both Abraham Maslow's hierarchy of needs and Herzberg's two-factor theory. Maslow's theory is one of the most widely discussed theories of motivation. Abraham Maslow believed that man is inherently good and argued that individuals possess a constantly growing inner drive that has great potential. The needs hierarchy system, devised by Maslow (1954), is a commonly used scheme for classifying human motives.[28]

The American motivation psychologist Abraham H. Maslow developed the hierarchy of needs consisting of five hierarchic classes. According to Maslow, people are motivated by unsatisfied needs. The needs, listed from basic (lowest-earliest) to most complex (highest-latest) are as follows:

- Physiology (hunger, thirst, sleep, etc.)
- Safety/Security/Shelter/Health
- Social/Love/Friendship
- Self-esteem/Recognition/Achievement
- Self actualization/achievement of full potential/can never be fully accomplished

[29] The basic requirements build upon the first step in the pyramid: physiology. If there are deficits on this level, all behavior will be oriented to satisfy this deficit. Essentially, if you have not slept or eaten adequately, you won't be interested in your self-esteem desires. Subsequently we have the second level, which awakens a need for security. After securing those two levels, the motives shift to the social sphere, the third level. Psychological requirements comprise the fourth level, while the top of the hierarchy consists of self-realization and self-actualization.

Maslow's hierarchy of needs 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.
- Needs are arranged in order of importance to human life, 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.

Herzberg's two-factor theory

Main article: Two-factor theory

-

Frederick Herzberg's two-factor theory 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.

Herzberg concluded that job satisfaction and dissatisfaction were the products of two separate factors: motivating factors (satisfiers) and hygiene factors (dissatisfiers). Some motivating factors (satisfiers) were: Achievement,

recognition, work itself, responsibility, advancement, and growth. Some hygiene factors (dissatisfiers) were: company policy, supervision, working conditions, interpersonal relations, salary, status, job security, and personal life.[2]

The name hygiene factors is used because, like hygiene, the presence will not improve health, but absence can cause health deterioration.
Herzberg's theory has found application in such occupational fields as information systems and in studies of user satisfaction such as computer user satisfaction.

Alderfer's ERG theory

Main article: 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 personal 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 as an intrinsic desire for personal development. Maslow's categories are broken down into many different parts and there are a lot of needs. The ERG categories are more broad and covers more than just certain areas. As a person grows, the existence, relatedness, and growth for all desires continue to grow. All these needs should be fulfilled to greater wholeness as a human being.[30] These include the intrinsic component from Maslow's esteem category and the characteristics included under self-actualization.

Self-determination theory

Main article: Self-determination theory

Since the early 1970s Edward L. Deci and Richard M. Ryan[31] have conducted research that eventually led to the proposition of the self-determination theory (SDT). This theory focuses on the degree to which an individual's behaviour is self-motivated and self-determined. SDT identifies three innate needs that, if satisfied, allow optimal function and growth: competence,[32][33] relatedness,[34] and autonomy.[35][36] These three psychological needs motivate the self to initiate specific behaviour and mental nutriments that are essential for psychological health and well-being. When these needs are satisfied, there are positive consequences, such as well-being and growth, leading people to be motivated, productive and happy. When they are thwarted, people's motivation, productivity and happiness plummet.[37]

There are three essential elements to the theory:[38]

- Humans are inherently proactive with their potential and mastering their inner forces (such as drive and emotions).
- Humans have an inherent tendency towards growth, development and integrated functioning.
- Optimal development and actions are inherent in humans but they do not happen automatically.

2.2.10 Temporal motivation theory

Main article: Temporal motivation theory

A recent approach in developing a broad, integrative theory of motivation is temporal motivation theory.[39] Introduced in a 2006 *Academy of Management Review* article,[40] it synthesizes into a single formulation the primary aspects of several other major motivational theories, including Incentive Theory, Drive Theory, Need Theory, Self-Efficacy and Goal Setting. It simplifies the field of motivation and allows findings from one theory to be translated into terms of another. Another journal article that helped to develop the Temporal Motivation Theory, "The Nature of Procrastination,[41] " received American Psychological Association's George A. Miller award for outstanding contribution to general science.

$$\text{Motivation} = \frac{\text{Expectancy} \times \text{Value}}{1 + \text{Impulsiveness} \times \text{Delay}}$$

where $Motivation$, the desire for a particular outcome, $Expectancy$ or self-efficacy is the probability of success, $Value$ is the reward associated with the outcome, $Impulsiveness$ is the individual's sensitivity to delay and $Delay$ is the time to realization.[41]

2.2.11 Achievement motivation

Achievement motivation is an integrative perspective 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. The emphasis on performance seeks to integrate formerly separate approaches as need for achievement[42] with, for example, social motives like dominance. Personality is intimately tied to performance and achievement motivation, including such characteristics as tolerance for risk, fear of failure, and others.[43][44][45]

Achievement motivation can be measured by The Achievement Motivation Inventory, which is based on this theory and assesses three factors (in 17 separated scales) relevant to vocational and professional success. This motivation has repeatedly been linked with adaptive motivational patterns, including working hard, a willingness to pick learning tasks with much difficulty, and contributing success to effort.[46]

Achievement motivation was studied intensively by David C. McClelland, John W. Atkinson and their colleagues since the early 1950s.[47] This type of motivation is a drive that is developed from an emotional state. One may feel the drive to achieve by striving for success and avoiding failure. In achievement motivation, one would hope that they excel in what they do and not think much about the failures or the negatives.[48] Their research showed that business managers who were successful demonstrated a high need to achieve no matter the culture. There are three major characteristics of people who have a great need to achieve according to McClelland's research.

1. They would prefer a work environment in which they are able to assume responsibility for solving problems.

2. They would take calculated risk and establish moderate, attainable goals.

3. They want to hear continuous recognition, as well as feedback, in order for them to know how well they are doing.[49]

2.2.12 Cognitive theories

The Cognitive Theory of motivation are derived from two basic theories which are the Goal-Setting Theory and the Expectancy Theory. The Goal-Setting Theory states the importance of setting a goal or which direction to aim for that goal in motivating an individual. As for the Expectancy Theory of Motivation states why and how people chooses to act in a certain way over another.[50] Cognitive theory[51] defines motivation in terms of how an individual reacts to different situations by examining and the process of thoughts to respond instead of an inner built set of instructions to react to different situations.

Goal-setting theory

Main article: 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. One common goal setting methodology incorporates the SMART criteria, in which goals are: specific, measurable, attainable/achievable, relevant, and timebound. 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.

Expectancy theory

Main article: Expectancy theory

Expectancy theory was proposed by Victor H. Vroom in 1964, the Expectancy Theory explains the behavior process in which an individual selects a behavior option over another, and why/how this decision is made in relation to their goal.

There's also an equation for this theory which goes as follows: M=E*I*V or Motivation = Expectancy*instrumentality*valence[52] M(Motivation) is the amount an individual will be motivated by the condition or environment they placed themselves in. Which is based from the following hence the equation. "E(Expectancy) is the person's perception that effort will result in performance. In other words, it's the person assessment of how well and what kind of effort will relate in better performance. I(Instrumentality) is the person's perception that performance will be rewarded or punished. V(Valence) is the perceived amount of the reward or punishment that will result from the performance."[53]

2.2.13 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.

John W. Atkinson, David Birch and their colleagues developed the theory of "Dynamics of Action" to mathematically model change in behavior as a consequence of the interaction of motivation and associated tendencies toward specific actions.[54][55] The theory posits that change in behavior occurs when the tendency for a new, unexpressed behavior becomes dominant over the tendency currently motivating action. In the theory, the strength of tendencies rises and falls as a consequence of internal and external stimuli (sources of instigation), inhibitory factors, and consummatory in factors such as performing an action. In this theory, there are three causes responsible for behavior and change in behavior:

1. Instigation (Ts) - increases tendency when an activity has intrinsic ability to satisfy;
2. Inhibition (Taf) - decreases tendency when there are obstacles to performing an activity; and
3. Consummation - decreases a tendency as it is performed.[56][57]

2.2.14 Thematic Apperception Test

Main article: Thematic Apperception Test

Psychologists David C. McClelland and John W. Atkinson argued that motivation should be unconscious. They refined measures of motivation by means of content analysis of imaginative thought using, for example, the Thematic Apperception Test.'[58][59]

2.2.15 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 found 16 basic desires that guide nearly all human behavior.[60][61] Intrinsic motivation is the tendency to find challenges, to push to find out for more, explore, and learn as much as possible. It is about reaching the most possible potential as a human being.[11] The 16 basic desires that motivate our actions and define our personalities 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 and for beauty
- Saving, the need to collect
- Social contact, the need for friends (peer relationships)
- Social status, the need for social standing/importance
- Tranquility, the need to be safe
- Vengeance, the need to strike back and to compete

2.2.16 Attribution theory

Main article: Attribution (psychology)

Attribution theory is a theory developed by psychologist, Fritz Heider that describes the processes by which individuals explain the causes of their behavior and events.[62] A form of attribution theory developed by psychologist, Bernard Weiner describes an individual's beliefs about how the causes of success or failure affect their emotions and motivations. Bernard Weiner's theory can be defined into two perspectives: intrapersonal or interpersonal. The intrapersonal perspective includes self-directed thoughts and emotions that are attributed to the self. The interpersonal perspective includes beliefs about the responsibility of others and other directed affects of emotions; the individual would place the blame on another individual.[63]

Individuals formulate explanatory attributions to understand the events they experience and to seek reasons for their failures. When individuals seek positive feedback from their failures, they use the feedback as motivation to show improved performances. For example, using the intrapersonal perspective, a student who failed a test may attribute their failure for not studying enough and would use their emotion of shame or embarrassment as motivation to study harder for the next test. A student who blames their test failure on the teacher would be using the interpersonal perspective, and would use their feeling of disappointment as motivation to rely on a different study source other than the teacher for the next test.

2.2.17 Approach versus avoidance

Approach motivation can be defined as when a certain behavior or reaction to a situation/environment is rewarded or results in a positive/desirable outcome. In contrast, avoidance motivation can be defined as when a certain behavior or reaction to a situation/environment is punished or results in a negative/undesirable outcome.[58][64] Research suggests that, all else being equal, avoidance motivations tend to be more powerful than approach motivations. Because people expect losses to have more powerful emotional consequences than equal-size gains, they will take more risks to avoid a loss than to achieve a gain.[58]

2.3 Practical applications

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.

2.3.1 Employee motivation

Main article: Employee motivation

Job characteristics model

Main article: Job characteristics model

The job characteristics Model (JCM), as designed by Hackman[65] and Oldham attempts to use job design to improve employee motivation. They show that any job can be described in terms of five key job characteristics:[66][67]

1. *Skill Variety* - the degree to which the job requires the use of different skills and talents
2. *Task Identity* - the degree to which the job has contributed to a clearly identifiable larger project
3. *Task Significance* - the degree to which the job affects the lives or work of other people
4. *Autonomy* - the degree to which the worker has independence, freedom and discretion in carrying out the job
5. *Task Feedback* - the degree to which the worker is provided with clear, specific, detailed, *actionable* information about the effectiveness of his or her job performance

The JCM links the core job dimensions listed above to critical psychological states which results in desired personal and work outcomes. This forms the basis of this 'employee growth-need strength." The core dimensions listed above can be combined into a single predictive index, called the *Motivating Potential Score*.

Motivating potential score See also: Work motivation and Job satisfaction

The motivating potential score (MPS) can be calculated, using the core dimensions discussed above, as follows:

$$\text{MPS} = \frac{\text{Autonomy} \times \text{Feedback} \times \text{Significance Identity+Task Variety+Task Skill}}{3}$$

Jobs high in motivating potential must be high on both Autonomy and Feedback, and also must be high on at least one of the three factors that lead to experienced meaningfulness.[68] If a job has a high MPS, the job characteristics model predicts motivation, performance and job satisfaction will be positively affected and the likelihood of negative outcomes, such as absenteeism and turnover, will be reduced.[68]

Employee recognition programs

Employee recognition is not only about gifts and points. It's about changing the corporate culture in order to meet goals and initiatives and most importantly to connect employees to the company's core values and beliefs. Strategic employee recognition is seen as the most important program not only to improve employee retention and motivation but also to positively influence the financial situation.[69] The difference between the traditional approach (gifts and points) and strategic recognition is the ability to serve as a serious business influencer that can advance a company's

strategic objectives in a measurable way. "The vast majority of companies want to be innovative, coming up with new products, business models and better ways of doing things. However, innovation is not so easy to achieve. A CEO cannot just order it, and so it will be. You have to carefully manage an organization so that, over time, innovations will emerge."[70]

2.3.2 Drugs Use and Abuse

Some authors, especially in the transhumanist movement, have suggested the use of "smart drugs", also known as nootropics, as "motivation-enhancers". These drugs work in various ways to affect neurotransmitters in the brain. It is generally widely accepted that these drugs enhance cognitive functions, but not without potential side effects.[71] The effects of many of these drugs on the brain are emphatically not well understood, and their legal status often makes open experimentation difficult.

2.3.3 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.[72] It can:

1. Direct behavior toward particular goals
2. Lead to increased effort and energy
3. Increase initiation of, and persistence in, activities
4. Enhance cognitive processing
5. Determine what consequences are reinforcing
6. 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.

If teachers decided to extrinsically reward productive student behaviors, they may find it difficult to extricate themselves from that path. Consequently, student dependency on extrinsic rewards represents one of the greatest detractors from their use in the classroom.[73]

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.[74]

Generally, motivation is conceptualized as either *intrinsic* or *extrinsic*. Classically, these categories are regarded as distinct.[75] Today, these concepts are less likely to be used as distinct categories, but instead as two ideal types that define a continuum:[76]

1. 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.[77] 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.[78]
2. 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).

Cassandra B. 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.[79][80]

Academic motivation orientation may also be tied with one's ability to detect and process errors. Fisher, Nanayakkara, and Marshall conducted neuroscience research on children's motivation orientation, neurological indicators of error monitoring (the process of detecting an error), and academic achievement. Their research suggests that students with high intrinsic motivation attribute performance to personal control and that their error-monitoring system is more strongly engaged by performance errors. They also found that motivation orientation and academic achievement were related to the strength in which their error-monitoring system was engaged.[81]

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.

Doyle and Moeyn have noted that traditional methods tended to use anxiety as negative motivation (e.g. use of bad grades by teachers) as a method of getting students to work. However, they have found that progressive approaches with focus on positive motivation over punishment has produced greater effectiveness with learning, since anxiety interferes with performance of complex tasks.[82]

Indigenous education and learning

For many indigenous students (such as Native American children), motivation may be derived from social organization; an important factor educators should account for in addition to variations in Sociolinguistics and Cognition.[83] While poor academic performance among Native American students is often attributed to low levels of motivation, Top-down classroom organization is often found to be ineffective for children of many cultures who depend on a sense of community, purpose, and competence in order to engage.[84] Horizontally-structured, community-based learning strategies often provide a more structurally supportive environment for motivating indigenous children, who tend to be driven by "social/affective emphasis, harmony, holistic perspectives, expressive creativity, and nonverbal communication."[85] This drive is also traceable to a cultural tradition of community-wide expectations of participation in the activities and goals of the greater group, rather than individualized aspirations of success or triumph.[86]

Also, in some indigenous communities, young children can often portray a sense of community-based motivation through their parent-like interactions with siblings.[87] Furthermore, it is commonplace for children to assist and demonstrate for their younger counterparts without being prompted by authority figures. Observation techniques and integration methods are demonstrated in such examples as weaving in Chiapas, Mexico, where it is commonplace for children to learn from "a more skilled other" within the community.[88] The child's real responsibility within the Mayan community can be seen in, for example, weaving apprenticeships; often, when the "more skilled other" is tasked with multiple obligations, an older child will step in and guide the learner.[88] Sibling guidance is supported from early youth, where learning through play encourages horizontally-structured environments through alternative educational models such as "Intent Community Participation."[89] Research also suggests that that formal Westernized schooling can actually reshape the traditionally collaborative nature of social life in indigenous communities[90] This research is supported cross-culturally, with variations in motivation and learning often reported higher between indigenous groups and their national Westernized counterparts than between indigenous groups across international continental divides.[91]

Also, in some Indigenous communities in the Americas, motivation is a driving force for learning. Children are incorporated and welcomed to participate in daily activities and thus feel motivated to participate due to them seeking a sense of belonging in their families and communities.[92] Children's participation is encouraged and their learning is supported by their community and family, furthering their motivation. Children are also trusted to be active contributors. Their active participation allows them to learn and gain skills that are valuable and useful in their communities.[93]

As children transition from early childhood to middle childhood, their motivation to participate changes. In both the Indigenous communities of Quechua people and Rioja in Peru, children often experience a transition in which they become more included into their family's and community's endeavors. This changes their position and role in their families to more responsible ones and leads to an increase in their eagerness to participate and belong. As children go through this transition, they often develop a sense of identity within their family and community.[94]

The transition from childhood to adolescence can be seen in the amount of work children partake in as this changes over time. For example, Yucatec Mayan children's play time decreases from childhood to adolescence and as the child gets older, is replaced for time spent working. In childhood the work is initiated by others whereas in adolescence it is self initiated. The shift in initiation and the change in time spent working versus playing shows the children's motivation to participate in order to learn.[95]

This transition between childhood and adolescence increases motivation because children gain social responsibility within their families. In some Mexican communities of Indigenous-heritage, the contributions that children make within their community is essential to being social beings, establishes their developing roles, and also helps with developing their relationship with their family and community.[96]

As children gain more roles and responsibilities within their families, their eagerness to participate also increases. For example, Young Mayan children of San Pedro, Guatemala learn to work in the fields and family run businesses because they are motivated to contribute to their family. Many San Pedro women learned to weave by watching their mothers sew when they were children, sometimes earning their own wool through doing small tasks such as watching young children of busy mothers. Eager to learn and contribute, these young girls helped other members of their community in order to help their mothers with their weaving businesses or

through other tasks such as helping carry water while young boys helped with tasks such as carrying firewood alongside their fathers.[97]

Children's motivation to learn is not solely influenced on their desire to belong but also their eagerness to see their community succeed. Children from Navajo communities were shown to have higher levels of social concern than Anglo American children in their schools. By having high levels of social concern the indigenous children are showing concern for not only their learning but also their peers', which serves as an example of their instilled sense of responsibility for their community. They wish to succeed as a united group rather than just themselves.[98]

In order to be knowledgeable contributors, children must be aware of their surroundings and community's goals. Children's learning in Indigenous-heritage communities is mainly based upon observing and helping out others in their community. Through this type of participation within their community, they gain purpose and motivation for the activity that they are doing within their community and become active participants because they know they are doing it for their community.[99]

Self-determination in education

Self-determination is the ability to make choices and exercise a high degree of control, such as what the student does and how they do it (Deci et al., 1991; Reeve, Hamm, & Nix, 2003; Ryan & Deci, 2002). Self-determination can be supported by providing opportunities for students to be challenged, such as leadership opportunities, providing appropriate feedback and fostering, establishing and maintaining good relationships between teachers and students. These strategies can increase students' interest, competence, creativity and desire to be challenged and ensure that students are intrinsically motivated to study. On the other hand, students who lack self-determination are more likely to feel their success is out of their control. Such students lose motivation to study, which causes a state of "helpless learning". Students who feel helpless readily believe they will fail and therefore cease to try. Over time, a vicious circle of low achievement develops.

Physical activity in education

Physical activity is body movement that works your muscles and requires more energy than resting. According to a blog by the American Intercontinental University, college students should make time for exercise to maintain and increase motivation. AIU states that regular exercise has impeccable effects on the brain. With consistent running routines, there are more complex connections between neurons, meaning the brain is able to access its brain cells more flexibly. By performing well physically, motivation will be present in education because of how well the brain is performing. After exercising, the brain can have more desire to obtain knowledge and better retain the information. In addition, exercise can relieve stress. Exercising can ease anxiety and relieve negative effects of stress on the body. Without stress factors, individuals can perform better and more efficiently, since their minds will have a more positive outlook. This positive mood will help keep students motivated and more open and willing to succeed academically. Lastly, exercise increases focus and concentration that could also help students maintain their motivation and focus on their studies. AIU claims that exercise may have improved the students' ability to participate and retain information during the class after they had exercised. Being able to retain information and being willing to participate keeps students motivated and performing well academically.[100]

2.3.4 Business

Main article: Work motivation

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.

According to Maslow, people are motivated by unsatisfied needs.[101] The lower level needs such as Physiological and Safety needs will have to be satisfied before higher level needs are to be addressed. We can relate Maslow's Hierarchy of Needs theory with employee motivation. For example, if a manager is trying to motivate his employees by satisfying their needs; according to Maslow, he should try to satisfy the lower level needs before he tries to satisfy the upper level needs or the employees will not be motivated. Also he has to remember that not everyone will be satisfied by the same needs. A good manager will try to figure out which levels of needs are active for a certain individual or employee.

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.[102]

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.[103]

The assumptions of Maslow and Herzberg were challenged by a classic study[104] 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 prioritizes 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.[105]

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 within work situations for motivating employees.[106]

William Ouchi introduced Theory Z, a hybrid management approach consisting of both Japanese and American philosophies and cultures.[107] Its Japanese segment is much like the clan culture where organizations focus on a standardized structure with heavy emphasis on socialization of its members. All underlying goals are consistent across the organization. Its American segment retains formality and authority amongst members and the organization. Ultimately, Theory Z promotes common structure and commitment to the organization, as well as constant improvement of work efficacy.

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:[108]

- 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

2.3.5 Games

Motivational models are central to game design, because without motivation, a player will not be interested in progressing further within a game.[109] 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.[110] The motivational structure of games is central to the gamification trend, which seeks to apply game-based motivation to business applications.[111] In the end, game designers must know the needs and desires of their customers for their companies to flourish.

There have been various studies on the connection between motivation and games. One particular study was on Taiwanese adolescents and their drive of addiction to games. Two studies by the same people were conducted. The first study revealed that addicted players showed higher intrinsic than extrinsic motivation and more intrinsic motivation than the non-addicted players.[112] It can then be said that addicted players, according to the studies findings, are more internally motivated to play games. They enjoy the reward of playing. There are studies that also show that motivation gives these players more to look for in the future such as long-lasting experience that they may keep later on in life.[113]

2.4 See also

Intrinsic motivation:

- Art for art's sake

Life:

- Ikigai

Unsorted:

- Adaptive performance
- Addiction
- Amotivational syndrome
- Andragogy
- Dopamine
- Equity theory
- Flow
- Goal orientation
- Happiness at work
- Health Action Process Approach
- Hedonic motivation
- Human behavior
- Human Potential Movement
- Humanistic psychology
- Industrial and organizational psychology
- I-Change Model
- Incentive program
- Learned industriousness
- Locus of control
- Motivation crowding theory
- Organismic theory
- Organizational behavior
- Personality psychology
- Positive education
- Positive Psychology in the Workplace
- Regulatory Focus Theory
- Rubicon model (psychology)
- Self-determination theory
- Self-efficacy
- Sexual motivation and hormones
- Social cycle theory
- Theory Z of Ouchi
- Volition
- Work engagement

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- Feynman, Richard (1981). The Pleasure of Finding Things Out. Nobel Prize-winning physicist Feynman on intrinsic motivation: "I don't know anything about the Nobel Prize. I don't understand what it's about, or what it's worth ... I don't like honors. I'm appreciated for the work that I did and I've noticed that other physicists use my work. I don't *need* anything else. I don't think there's any *sense* to anything else. I don't see that it makes any *point* that someone in the Swedish Academy decides that this work is "Nobel" enough to receive a prize. I've already got the prize. The prize is the pleasure of finding the thing out, the kick in the discovery, the observation that other people use it. Those are the *real* things. The honors are unreal to me."
- Shaw, Bershan (2009), *Motivational Speakers*, New York: 68 Jay St, Brooklyn, 12001

2.7 External links

Chapter 3

Effort justification

Effort justification is an idea and paradigm in social psychology stemming from Festinger's theory of cognitive dissonance.[1] Effort justification is people's tendency to attribute a greater value (greater than the objective value) to an outcome they had to put effort into acquiring or achieving.

3.1 Theory and research

Cognitive dissonance theory explains changes in people's attitudes or beliefs as the result of an attempt to reduce a dissonance (discrepancy) between contradicting ideas or cognitions. In the case of effort justification, there is a dissonance between the amount of effort exerted into achieving a goal or completing a task (high effort equalling high "cost") and the subjective reward for that effort (lower than was expected for such an effort). By adjusting and increasing one's attitude or subjective value of the goal, this dissonance is resolved.

One of the first and most classic examples of effort justification is Aronson and Mills's study.[2] A group of young women who volunteered to join a discussion group on the topic of the psychology of sex were asked to do a small reading test to make sure they were not too embarrassed to talk about sexual-related topics with others. The mild-embarrassment condition subjects were asked to read aloud a list of sex-related words such as *prostitute* or *virgin*. The severe-embarrassment condition subjects were asked to read aloud a list of highly sexual words (e.g. *fuck*, *cock*) and to read two vivid descriptions of sexual activity taken from contemporary novels. All subjects then listened to a recording of a discussion about sexual behavior in animals which was dull and unappealing. When asked to rate the group and its members, control and mild-embarrassment groups did not differ, but the severe-embarrassment group's ratings were significantly higher. This group, whose initiation process was more difficult (embarrassment equalling effort), had to increase their subjective value of the discussion group to resolve the dissonance.

3.2 Implications

This theory is clearly implicated in the effect of rites of passage and hazing rituals on group solidarity and loyalty. The hazing rituals, prevalent in military units, sports teams and fraternities and sororities, often include demanding and/or humiliating tasks which lead (according to dissonance theory) the new member to increase the subjective value of the group. This contributes to his/her loyalty and to the solidarity of the entire group.

3.3 Competing views

Critics of this theory[3] claim it is dependent on complex social context (which is responsible for the creation of dissonance), but research has shown the same effects in children (who understand less about social context and therefore are less likely to be influenced by it) and even in pigeons.[4] Alessandri, Darcheville & Zentall (2008) argue that the cause for these findings, both in humans and animals, is the contrast effect. According to this theory, the preference is a result of the difference between the reward and the situation that leads to it. When the preliminary situation is unpleasant or strenuous, the difference between it and the reward that follows is great. When the preliminary situation is not especially unpleasant or strenuous, the difference between it and the reward is smaller. The reward that has the larger difference from its preliminary situation will be preferred since it is experienced as more positive.

In the context of hazing and group initiation rituals, there is support for the reward explanation since group identity among initiates increases as feelings of being rewarded increase.[5] Another alternative explanation is that hazing or initiation rituals increase physiological responses, which then cause an increase in affiliation among initiates.[6] Alternatively, hazing and initiation effects have been associated with Bowlby's attachment theory.[7]

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3.5 Text and image sources, contributors, and licenses

3.5.1 Text

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