WILLIAM JAMES, PRAGMATISM AND THE THEORIES OF EMOTIONS.
WILLIAM JAMES, PRAGMATISMO E AS TEORIAS DA EMOÇÕES.

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SUMMARY

Although there are many aspects of the mind that we have yet to discover and understand, certainly one of the more interesting facets that has yet escaped concrete analysis and proof is the question of where exactly our emotions come from and how we display them. While there are many basic facts about emotion, such as what constitutes a basic emotion, and what the general meanings of these emotions are, some of the more complex ideas have no concrete proof behind them. Thankfully, a variety of theories constructed across history have attempted to answer this question and offer a definition. While many of these theories have been in part proven false, it is nonetheless important that we understand them as a starting point for our quest in eventually answering the idea of emotions. One of the earliest, and thus one of the background theories of emotion was created by William James and Carl Lange in the late 1880's.

This theory has become known as the James-Lange Theory of emotion, and the basic ideas behind it are very interesting indeed. Whereas we normally tend to think of our bodies and our faces changing to reflect the emotions which we are feeling, the James-Lange theory states that basically the opposite is true. Boiled down, this theory states that emotions come after our bodies react. For example, assume one was walking through the woods, and a large angry grizzly bear burst out. According to the James-Lange Theory, we would run from the bear automatically, and, in the course of our running, would discover that we were afraid based upon the bodies reaction to the stimulus. According to James-Lange, we feel emotions because we sense the change in our bodies. Thus, the physiological responses by our bodies to various situations are interpreted by our bodies and then our minds, based upon those responses, construe the emotion that we should be feeling.

Although several current theories do use information obtained in part from the James-Lange theory, it takes only a little bit of common sense to realize that many of these ideas do not hold a place in contemporary psychology or the fact based study of mental health. Of course, the most obvious flaw here is that simple experience shows us that physiological responses rarely happen without thought from the brain. By following that tract, it is easy to realize that although the physiological response of the body may be a contributor to our emotions, it is simply not the cause. In fact, most would suggest, and as would contemporary theory that our emotions cause physical reactions, and not the other way around.

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The James-Lange theory also fails to account for the idea that different people may have different reactions in different situations, and that these differences would radically alter the spectrum of emotion as a whole. Even when we have similar physiological reactions, such as the increased awareness of the somatic nervous system and the increased body temperature and heart beat in situations which make us angry, it largely depends on the individual person with regards to how these emotions are acted upon, and what they mean as a whole.

Although it is important that we consider the James-Lange theory as the base of contemporary research into the root causes of emotions and what those causes may mean, it is also equally important that we do not place too much emphasis on the theory. Even though many important ideas are discussed, and this is perhaps the first time that we begin to see that the brain and body are linked in emotional responses, most modern research and study suggests the opposite of what James and Lange are saying. Thus, even though it may be important to learn the background of a theory, it is equally important that we compare the theory to modern research to see where it stands today before we place too much emphasis on it.

RESUMO

Embora existam muitos aspectos da mente que ainda temos de descobrir e entender, certamente uma das facetas mais interessantes que ainda tem escapado à análise e prova concreta é a questão de saber de onde exatamente as nossas emoções vêem e como as exibimos. Enquanto existem muitos fatos básicos sobre a emoção, como o que constitui uma emoção, e quais são os significados gerais dessas emoções, algumas das idéias mais complexas não têm nenhuma prova concreta. Felizmente, uma variedade de teorias construídas ao longo da história tem tentado responder a esta questão e oferecer uma definição. Embora muitas dessas teorias foram comprovadas falsas em parte, não é menos importante entendê-las como ponto de partida para a nossa busca, eventualmente, em resposta à idéia de emoções. Um dos primeiros e, assim, uma das teorias básicas da emoção foi criada por William James e Carl Lange no final da década de 1880.

Esta teoria se tornou conhecida como a teoria James-Lange da emoção e as idéias básicas por trás dela são muito interessantes, de fato. Considerando que, normalmente tendem a pensar na mudança de nossos corpos e nossas fisionomias para refletir as emoções que estamos sentindo, afirma a teoria de James-Lange que, basicamente, o oposto é verdadeiro. Em resumo, afirma esta teoria de que as emoções vêm depois que os nossos corpos reagem. Por exemplo, suponha que alguém está andando pela floresta, e um bravo grande urso pardo apareça. Segundo a teoria de James-Lange, correríamos do urso automaticamente, e, no decorrer da nossa corrida, iríamos descobrir que estaríamos com medo devido à reação ao estímulo sentido pelo nosso corpo. De acordo com James-Lange, sentimos emoções porque sentimos alterações em nosso corpo físico. Assim, as respostas fisiológicas de nosso corpo à situações diferentes são interpretadas pelos nossos corpos e nossas mentes, em seguida, com base nestas respostas, interpretamos a emoção que estamos sentindo.

Embora várias teorias atuais utilizem as informações obtidas da teoria de James-Lange, é preciso apenas um pouco de bom senso para perceber que muitas dessas idéias não ocupam um lugar na psicologia contemporânea ou no estudo de base da saúde mental. Claro, a falha mais óbvia aqui é que a simples experiência, mostra-nos que as respostas fisiológicas raramente ocorrem sem o pensar do cérebro. Seguindo esse aparelho, é fácil perceber que, embora a resposta fisiológica do corpo pode ser um contributo para as nossas emoções, não é simplesmente a causa. Na verdade, a maioria sugere, e como ocorre na teoria contemporânea, que nossas emoções causam reações físicas, e não o contrário.

A teoria de James-Lange também não leva em conta a idéia que pessoas diferentes podem ter reações diferentes em situações diferentes, e que essas diferenças alteram radicalmente o espectro das emoções como um todo. Mesmo quando temos reações fisiológicas similares, tal como a atenção aumentada do sistema nervoso somático e do aumento da temperatura corporal e os batimentos cardíacos em situações que nos trazem ira, depende muito de cada indivíduo no que diz respeito como essas emoções são colocadas em prática, e o que elas significam como um todo.

Embora seja importante considerarmos a teoria de James-Lange como fundamento da pesquisa contemporânea sobre as raízes das emoções e que essas causas podem significar, também é igualmente importante não colocar muita ênfase na teoria. Embora muitas idéias importantes sejam discutidas, e talvez esta seja a primeira vez que começamos a ver que o cérebro e o corpo estão ligados em respostas emocionais, a investigação e estudo mais modernos sugerem o contrário do que James e Lange dizem. Assim, ainda que possa ser importante para aprender o contexto de uma teoria, é igualmente importante que se compare a teoria com a pesquisa moderna para ver onde ela está hoje, antes de se colocar demasiada ênfase nesta.

I. INTRODUCTION

Pragmatism, Psycology and William James

Pragmatism was designed as a method, through which the metaphysical speculation is unraveled. The purpose of this method is achieved by inquiring about the consequences of practical actions that could be deduced from such speculation.

The originators of pragmatism, each of who agreed that it was a method and not a doctrine, where Charles Peirce (1839-1914), William James (1842-1910), and John Dewey (1859-1952). Each of them was conversant with European intellectual culture and engaged with contemporary movements in European thought. Although characterized as an American movement, pragmatism's interaction with European thought has been a constant feature of its development.

Charles Peirce first introduced the term pragmatism, in his papers "The Fixation of Belief" (1877) and "How to Make our Ideas Clear" (1878), as the name of a logical method for going beyond formalism and abstraction. William James drew on Peirce's discussion in a paper delivered in 1898 and published in the same year, "Philosophical Conceptions and Practical Results"(1898). When he republished his paper in 1904 effectively launched pragmatism as a philosophical movement. In 1907, the publication of "Pragmatism: A New Name for Some Old Ways of Thinking", the pragmatic movement became fully identified with its author, William James.

Psychology was once an area of study within philosophy, and William James was for a number of years a philosophy professor. The distinction between the two fields was that psychology was 'the science of mental life', that is, of minds within a particular body, which exist in time and space, having thoughts and feelings in relation to the physical world they are in. Explanations of thoughts as the product of some deeper force, on the other hand, such as the soul or ego, were really the realm of metaphysics.

William James considered this new subject a *natural* science which required analysis of feelings, desires, cognitions, reasoning and decisions according to their own features and dynamics, in the same way that one would explain the building of a house by looking at its stones and bricks. His choice to look at the phenomena of psychology, rather than some theory

behind them, advanced the subject considerably and achieved his aim of putting it on a firmer scientific footing.

Often depressed or in frail physical health, *The Principles of Psychology* (1890) took William James all of 12 years to write. In his Preface, he writes: "...it has grown to a length which no one can regret more than the writer himself. The man must indeed be sanguine who, in this crowded age, can hope to have many readers for fourteen hundred continuous pages from his pen". This was the famous 2-volume 'long course', the full version of the book. But he also produced a condensed form of it, known as the 'Jimmy' to college students, who were grateful not to have to tackle the real thing.

Given its size, it would be presumptuous to 'sum up' William James' masterpiece. However, we will look at a few ideas which hopefully give a flavor of its contents.

Creatures of habit

"When we look at creatures from an outward point of view", William James notes, "one of the first things that strike us is that they are bundles of habits".

What are habits exactly? In his research into the physiology of the brain and nervous system, William James concluded that they boil down to being 'discharges in the nerve centers' involving a pattern of reflex paths which are woken up successively. Once one of these paths is created, it becomes easier for the nerve current to pass along this path again.

However, William James noted a difference between the habitual behavior of animals, and that of humans: while the actions of most animals are automatic, and relatively limited and simple, because of our wide variety of desires and wants humans have to consciously form new habits if they are to achieve certain results. The problem is that creating new, good habits, requires work and application. William James wrote that the key to good habits is to act decisively on the resolutions you make. Actions create the motor effects in our nervous system which turn a wish into a habit; the brain has to 'grow' to your wishes, and the path will not be made unless this repeated action takes place.

The key, William James noted, was to make the nervous system our ally instead of our enemy: “As we become permanent drunkards by so many separate drinks, so we become saints in the moral, and authorities and experts in the practical and scientific spheres, by so many separate acts and hours of work”, he wrote. Though we don't think they matter that much at the time, our actions when added up account either for a powerful integrity or a damning failure.

This all seems very familiar to us now, but be aware that much of the emphasis on forging positive habitual behavior in today's psychology and personal development writing can be traced back to William James's thinking on the subject.

Us and the rest

William James’s understanding of psychology revolved around the personal self. That is to say, general talk about 'thought' and 'feeling' as abstract concepts did not mean much next to the personal reality of 'I think' and 'I feel'. He wrote that each person is separated from each other by a wall – that is, the skull enclosing the brain – and ventured that the world is neatly divided into two halves, with ourselves taking up one whole half, and the rest of the world, with everyone in it, in the other:

> “One great splitting of the whole universe into two halves is made by each of us; and for each of us almost all of the interest attaches to one of the halves ...When I say that we all call the two halves by the same names, and that those names are 'me' and 'not-me' respectively, it will at once be seen what I mean.”

This is a simple insight which, like so many of William James', borders on folk wisdom. However, it recognizes that people become interested in psychology not because they want to study broad principles regarding thought and emotion, but because they want to know why *they* think and feel the way they do.

A division of the world into 'me', and 'the rest' is a little confronting, especially for those who consider that they live for others, yet it is the very physiology of human beings, with one brain inside one body, always looking out at the rest of the world, that makes this a fact.

The stream of thought

Not only do we each see the world differently, but our own personal consciousness will not be the same from day to day, even hour by hour. As William James put it:

> "We feel things differently according as we are sleepy or awake, hungry or full, fresh or tired; differently at night and in the morning, differently in summer and in winter, and above all things differently in childhood, manhood, and old age...The difference of the sensibility is shown best by the difference of our emotion about the things from one age to another... What was bright and exciting becomes weary, flat, and unprofitable. The bird's song is tedious, the breeze is mournful, the sky is sad."

He observed that we can never have exactly the same thought more than once. We may be able to sustain an illusion of sameness, but the fact of a constantly changing world, and the need for our constantly altering reactions to it, means this is impossible:

> "Often we are ourselves struck at the strange differences in our successive views of the same thing. We wonder how we ever could have opined as we did last month about a certain matter. We have outgrown the possibility of that state of mind, we know not how. From one year to another we see things in new lights."

And it is just as well, for this constant change, this perpetual movement and then return to equilibrium, is what makes us human.

William James also famously observed that thought is continuous – like a stream. We use phrases like a 'train of thought' or 'chain of thought', but the real nature of thought was flowing. He noted that "The transition between the thought of one object and the thought of another is no more a break in the thought than a joint in a bamboo is a break in the wood. It is a part of the consciousness as much as the joint is a part of the bamboo."

The science of psychology has, since William James, parsed every thought, feeling and emotion into thousands of categories, which indeed is the work of a science. But psychology would do well to remember that this is not how it *feels* to be conscious. Consciousness is not at all like the

processing of a computer. Rather, to be alive is to experience a constantly flowing river of idea, thought and feeling.

The successful self

William James admitted that he had sometimes fancied being a millionaire, an explorer, a lady killer, but came back to the sad truth that he had to settle on one self. To be many things would be too contradictory. To be effective in life, we have to choose from many possible personages, and to 'stake our salvation' on that self. The downside is that if you stake your self on being, for instance, a great oarsman or a great psychologist, to fail at this ambition would be a grievous hit to our self-esteem. We have to choose carefully in what we are most likely to succeed.

If there is little gap between our potentialities and our actualities, we will regard ourselves well. William James famously provided a formula for self-esteem:

$$\text{Self-esteem} = \frac{\text{Success}}{\text{Pretensions}}$$

He pointed to a 'lightness of the heart' when we give up chasing certain potentialities or illusions which we will never achieve, such as being young, slim, musical or a famous athlete. Each illusion, if discarded, is one less thing that will disappoint us, and one less thing out of the way that will hold us back from real success.

Final comments

William James' focus on the self does not seem remarkable now, as we live in such an individualistic age. But at the time he was writing, the social fabric was much thicker, and one's place in society was of much greater import than what went on inside one's head. Yet when you consider the restrictions he placed on his own subject, William James's thinking could not really have gone any other way. His definition of psychology as the science of mental life meant the life within individual brains, the thoughts and feelings of individual people - not 'the human mind' in general.

While the 20th century psychologists who came after him got caught up in rather mechanical models of the mind and behavior, William James, over a hundred years ago, was describing human consciousness as like the *aurora borealis*, the luminous northern lights, whose "...whole internal equilibrium shifts with every pulse of change." Such a poetic gift for explanation did not endear William James to the lab-rat-in-mazes brand of modern psychology, but it was precisely his artistic sensitivity, deep philosophical knowledge and even openness to mystical ideas that allowed him to push out the boundaries of his field. Others would follow to do the laborious job of turning psychology into a science, but it needed a philosopher of his caliber to first paint a picture of the landscape.

Much has been made of William James' elegant and lively prose, and it is this – plus a personal, familiar tone unusual for the times - which makes *The Principles of Psychology* readable today. He was often overshadowed by his novelist brother, but William James could easily gone the path of a writer himself (it has been said that Henry William James was the psychologist who wrote novels, and William the novelist who wrote psychology!).

That said, *The Principles of Psychology* is no easy read, with the good bits lying amid many long passages that are either quite technical (involving the physiology of the brain and nervous system) or require you to mull over difficult concepts. William James himself suggested readers skip around and read what interested them, rather than going through the whole work – from someone who helped establish a science, a typically humble suggestion.

II. EMOTION

Emotion is one of the most controversial topics in psychology, a source of intense discussion and disagreement from the earliest philosophers and other thinkers to the present day. Most psychologists can probably agree on a description of emotion, e.g., what phenomena to include in a discussion of emotion. The enumeration of these parts of emotion are called the "components of emotion" here. These components are distinguished on the basis of physiological or psychological factors and include emotion faces, emotion elicitors, and emotion neural processes.

III. COMPONENTS OF EMOTION

The component that seems to be the core of common sense approaches to emotion, the one that most people have in mind when talking about human emotions, is the feeling component, i.e., the passion or sensation of emotion. For example, people generally agree that the state of mind during anger is different from that when one is happy. This component is also one of the most contentious in scientific discussions of emotion, raising many questions such as:

- to what extent are such feelings, especially the claimed differences in quality, based on real physical differences?
- is the feeling quality of a particular emotion shared among people?
- what is the nature of the differences in quality among emotions?
- what underlies or produces these feelings?
- what importance or function do such feelings have?

Another obvious descriptive component of emotion is the set of behaviors that may be performed and observed in conjunction with an emotion. These behaviors are produced by the striated muscular system and are of two general types: gross behaviors of the body effected by the skeletal muscles and the so-called emotion expressions. These categories shade into each other because any behavior can be interpreted as expressing emotion. The gross body behaviors may have no apparent adaptive value, e.g., wringing and rubbing the hands or tapping a foot, or they may be directed towards a goal, e.g., striking something or running away. In the field of animal behavior, discovering the adaptive function and organization of behaviors in situations analogous to human emotion, and speculating on the evolutionary patterns of these behaviors is an established endeavor.

This emphasis has not typically been given to the study of human emotions by psychologists. The facial and bodily behaviors called "emotion expressions" are indicators of emotion, as opposed to effecting some action or achieving some goal. These expressions can differentiate one emotion from another. The most widely discussed and investigated emotion expressions are the emotion faces.

A less obvious component of emotion is the set of internal bodily changes caused by the smooth muscles and glands. Chemicals secreted by the body's various glands are activated during emotion and spread to other parts of the body, usually by the blood, to act in diverse ways on the nervous system and other organs. Smooth muscles of the digestive system, circulatory system, and other bodily components can shift from their typical level or type of operation during emotion under the effects of chemical and neural action. This component includes some behaviors that can be observed, such as the constriction or dilation of the iris of the eye, possibly piloerection, and sweating, blanching, and flushing of the skin, and other responses that are relatively hidden, such as heart rate, stomach activity, and saliva production.

Another less observable component in emotion consists of the ideation, imagery, and thoughts that occur during emotion. These aspects of emotion are also cognitive activities, and can both give rise to an emotional event and be affected by it, e.g., thinking about a lost pet may evoke feelings of sadness, which may in turn evoke memories of a romance now finished. Since thoughts and other cognitions, like feelings, cannot be directly observed and are hard to measure, there is less understanding of how they fit into the emotion picture than other components.

The circumstances that give rise to emotions comprise another component, called the "elicitors" of emotion. These elicitors might be internal or external to the organism, e.g., a frightening pain in one's chest or a frightening dog at one's heels. Some events seem to activate similar emotion in people of all cultures, for example, the death of one's own child typically elicits sadness. Other things, such as what foods are relished or rejected with disgust, vary widely according to acculturation.

Finally, the neural processes that underlie much of the preceding activities can be considered a component of the emotion process, especially how the neurons and their emotional concomitants are organized centrally in the brain. Many contemporary research studies, and thus a lot of the research money, is focused on anatomical and functional aspects of brain activity in regard to emotion.

Theories of Emotion

When it comes to theories of emotion, there is no shortage of ideas, and they have come from diverse sources. Philosophers have offered many proposals concerning emotion, throughout the ages, from the ancient Greeks to Sartre and modern scholars. Creative artists have proposed explanations for emotion, its meaning and impact, and ways to portray it in sculpture and painting. Natural scientists, such as physiologists and animal behaviorists, etc., have speculated on the origins, evolution, and functions of emotion. Psychologists, anthropologists, and sociologists have proliferated theories about emotion and its significance to the individual and society. Other disciplines also have their views on emotion, including political science, economics, performing arts, etc. In this discussion, we focus on theories that have to do with emotion and facial expression. To put these theories in perspective, it helps to understand emotional expression.

Beyond the descriptive approach to emotion, there are theories of emotion, which attempt to specify the interrelationships among components as described above and the causes, sources, and functions of emotional responses. Disagreement characterizes the intellectual climate surrounding emotion theories, but there are several works in print that summarize these approaches for the interested reader. The Theories of Emotion of this section summarizes some of the most important theoretical statements on emotion that emphasize the role of the face.

Expression of Emotion

Emotion expression is another area of controversy, but at the descriptive level, some behaviors tend to occur with other components of emotion, and seem to reveal the quality of the emotion to an observer. The Emotion Expressions page of this section discusses the relations between emotion and facial expression.

In some theories, emotional expression is regarded as an integral aspect of the emotion process. Some theorists have proposed that emotional expression underlies the experience of emotion, which includes the felt quality of emotion. William James, a Harvard professor in the late 19th century, is a well known proponent of the view that perceiving the bodily changes during emotion constitutes the emotional experience, and without this perception, emotion would be pale and colorless. James argued strongly that there is no thing in the mind called emotion that

precipitates bodily activity, rather the reverse is true. James collaborated with the German, Lange, a student of Wundt, who independently proposed a similar theory, to develop this idea. James thought that the body acted like a sounding board, struck by neural impulses to create the waves of change that could then be sensed by the brain as a quality of emotional feeling. Thus, the varieties and shades of emotion are as infinite as the bodily patterns that neural action can create, and the categories of emotion are arbitrary and academic.

William James himself proposed the crucial test of this hypothesis in the experiments of nature where the neural system is damaged so that bodily changes cannot be sensed. Although several experiments on this theme have been reported in the literature, their interpretation is problematic, though generally viewed as failing to support James's hypothesis. Another aspect of James's theory of emotion is that the bodily changes are immediately effected by the nervous system, in a process only slightly more complex than a reflex or instinctual reaction. More recent research indicates that some emotional changes may take rather longer to occur.

William James thought that every instinctual response sets off an emotion, but there are many other sources of emotional response, which may be as gross as rage or as subtle as an aesthetic appreciation of beauty. He believed there are no brain centers specific to emotion nor to any specific emotion, an idea that recent research casts serious doubt upon. He argued that people vary in their ability to preserve and recall experiences of emotion, and the degree to which they experience emotion in general. Repeated emotion results in blunting more readily than in other types of feelings. He thought that facial expressions, and other bodily changes, result from either weakened repetitions of formerly useful actions or continue to be physiologically useful reactions.

Silvan Tomkins, a mid-20th century psychologist, took part of the James-Lange theory a step further by proposing that the sensations provided by emotional expressions, vascular changes, and other changes in the face are the source of the qualitatively different feelings of emotion, e.g., happy from sad, fear from anger. Perception of other bodily changes provides less specific feelings of emotion. He argued, contrary to James, that there are specific categories of emotion that have evolved for certain functional, adaptive reasons, which are likewise reflected in neural organization. These categories of emotion correspond to specific categories of facial

expressions and are organized around their facial expressions. For example, emotions related to disgust derive from the prototype of rejecting food that is noxious or dangerous to eat, with a core expression of opening the mouth and lips, and pushing out with the tongue. This prototype disgust reaction has generalized to other rejection scenarios, such as the emotion of contempt, where the object is another person, and the emotion of shame, where the object is the self. He enumerated the emotion categories, specified their expressions, and described each emotion extensively in a multi-volume work.

The main thesis of this work is that the emotion system is the primary motivational system for a wide range of human behaviors. Another distinctive aspect of his theory is accounting for the elicitors of emotion in terms of a general level and rate of increase or decrease of neural stimulation.

His theory of emotion (affect in his terms) has many other aspects and weaves into the account many interesting facets of psychology. He did not hesitate to take on difficult philosophical issues, such as free will and consciousness, and to connect emotion with significant areas of psychology, such as cognition and abnormal psychology. Silvan Tomkins's new look at facial expression and emotion, together with his persuasive charisma, was largely responsible for encouraging the work of colleagues in the late 20th century that resulted in a heightened place in psychology for these topics. He also had a reputation of being an acute judge of others and an insightful interpreter of faces.

IV. THEORIES OF EMOTION

All trends pertaining to the mind/body problem in the late 19th century, from both popular and high culture, seem now in retrospect to culminate in the functionalism of the American philosopher-psychologist, William James (1842-1910).

Thus, he first became a defender of consciousness as an efficacious force in the biological evolution of the species. As a young medical student in the 1860s, he sided with the Darwinians at Harvard and began his literary career by writing favorably about the effects of natural selection on mental life. Consciousness, he observed, obeys the laws of variation and selection. Intuitive types, prone to emotional uprushes, who produce art and literature, geniuses whose

mind is in constant ferment so they can see analogies that others miss, original thinkers whose associations are unfettered, all represent consciousness as a field of awareness that contains the largest number of ideas to choose from. Rationality and the empirical dictates of the sensory world then select out what is adaptive and what is not. In this manner experience as a whole counts as a potent force in the preservation of the race.

As a young professor of psychology at Harvard, James then anchored the study of consciousness to experimental physiology. In collaboration with Henry Pickering Bowditch and James Jackson Putnam at Harvard Medical School, James reproduced the experiments of Meynert and Fritsch and Hitzig to settle certain problems in the controversy over the localization of function. Extending the work of Bain and the British associationists on ideo-motor activity, he articulated a biologically grounded theory of instincts and linked these with the psychological development of emotion and habit. Going beyond the psychophysics of Helmholtz and Wundt, he linked the physiological understanding of perception to realms of symbolic meaning when he claimed from an evolutionary standpoint that when we are confronted with the blooming, buzzing mass of confusion before us, attention to outward stimuli is largely a function of personal interest.

At the height of his professional career, in 1890, James produced perhaps the most important text still available in the discipline, his two volume *Principles of Psychology*, see figure 51]. In it, he began from a preoccupation with the object at the center of attention and advocated that psychology develop around a cognitive psychology of consciousness. His most enduring metaphor became the stream of thought. But ideas never exist in isolation; what colors thoughts and gives continuity to the pulsating stream is the thought's feeling-tone. Here was his doctrine of relations. Just as objects can be experienced, so too can the relations between them. Thus, he said, any legitimate scientific psychology must account for both the stream of thought *and* feeling.

Immediately after the publication of his *Principles* and the international acclaim that followed, James turned his attention to the role of attitudes and values on health and disease. Particularly between 1890 and 1902, he reviewed the French and German literature on experimental psychopathology and continued to conduct experiments on hypnosis, automatic

writing, and other phenomena of dissociation that he had begun in the late 1880s. He became a conduit for the latest developments in the French experimental psychology of the subconscious and corresponded with Pierre Janet and Théodule Ribot on problems related to the pathology of the emotions. He ardently defended the psychotherapeutic practices of the American mental healers against attacks by the medical profession; and between 1893 and 1896 he taught an advanced graduate seminar on psychopathology at Harvard that influenced a subsequent generation of investigators in scientific psychotherapy.

The most important work of this period was his previously unpublished Lowell Lectures of 1896 on *Exceptional Mental States*. His individual lecture titles were: Dreams and Hypnotism, Automatism, Hysteria, Multiple Personality, Demoniacal Possession, Witchcraft, Degeneration, and Genius. The first four talks establish James as the master of a modern dynamic psychology of the subconscious, while the remainder articulate the pathological working of the subconscious in the social sphere.

His main thrust was that experience contains more than just waking awareness and some murky realm called the unconscious. Rather, personality was an ultimate plurality of states. Waking consciousness was but one state out of many, its significance being only for survival of the biological organism in the external world. Other realms of human experience at different levels of the person also existed simultaneously alongside waking consciousness. Consciousness, in fact, was a field with a focus and a margin. While the object at the center of attention may remain the same, the very ground of perception may become radically altered through fatigue, traumatic shock, or intrapsychic conflict in ways that the standard scientific explanations of perception had not accounted for. The implications of these findings would, in turn, soon alter James's conception of science.

Meanwhile, in 1902, William James advanced his thinking on the mind/body problem a step further when, in his *Varieties of Religious Experience*, he investigated the role of the transcendent experience in the remaking of shattered lives. The significance of religion, he said there, lies within the experience of the individual. The subconscious, it seemed to him, was the doorway through which the ultimately transforming experiences that we call mystical appear to come -- transient, passive, states from which the intellect itself may be derived. Whatever they

are, when they came, personality was permanently altered. But the adequacy of these experiences, he further maintained, could only be tested in terms of their fruits for life.

These evolving conceptions of consciousness, based on experimental evidence and corroborated by living testimony, even as early as 1890 began to alter James's conception of how a scientific psychology could legitimately be conducted. As the culmination of his work in psychology throughout the 1890s, James evolved a philosophical epistemology which he believed was sophisticated enough to challenge the supremacy of scientific materialism.

The basis of this critique, and the logical outcome of both his study of the British Empiricists and the pragmatism of C. S. Peirce, was his metaphysics of radical empiricism. James's approach was empirical, he said, because it confined itself only to the facts of experience. It was radical, however, in that it demanded science not ignore any aspect of reality if it could, in fact, be experienced. The main question his philosophy sought to address was the fundamental dichotomy between subject and object. Subjective factors had to be eliminated in order for an objective psychology to arise. The psychologist's ploy was to claim that good science was positivistic; that is, it sought no metaphysical or supernatural explanations for physical phenomena, but presumed that everything we needed to know was knowable through the intellect and the senses.

William James had even written his *Principles* from this standpoint, but the evidence from experimental psychopathology about the emotions and subconscious states had forced him to rethink the problem. In the mid-1890s he first enunciated his view that the agenda to separate positivistic science from metaphysics should be abandoned, since no scientific theory was free of metaphysics. Positivism, for instance, was, itself, based on a metaphysics of physicalism; that is, a set of preconceived assumptions about how the physical world can be studied.

This new thinking, however, posed two new problems for James: first, what is consciousness, if it is not a faculty independent of objects, and second, how was one to reconcile conflicting truth claims if reality was a function of so many different states of consciousness. The first question James answered in his 1904 article, "Does consciousness exist?". There he scandalized philosophers and psychologists alike by asserting that consciousness did not exist as

an independent entity, but as a function of particular experiences. Consciousness and object had to be considered in the same functional complex. One could not be defined without the other. Here we have the germ of phenomenology, contextualism, and modern hermeneutic analysis, all of which can trace their origin through various routes back and then across James's path.

The second question James addressed initially in his 1898 address to the Berkeley Union, *Philosophical Conceptions and Practical Results*, and again in his 1906 Lowell lectures, published in 1907 as *Pragmatism, A New Name for Some Old Ways of Thinking*. "Pragmatism", James said, meant two things. It was first of all a way to evaluate truth claims, not by looking at the truth or falsity of a primary definition but by evaluating the claim in terms of its moral and aesthetic outcome. Two different truths with the same outcome, in other words, were functionally the same. Second, it also suggested a way of reconciling conflicting definitions of reality. People could still maintain their individual idiosyncratic beliefs if the outcome of those different beliefs led to common and consensually validated ways of acceptable social behavior.

William James was not so naive, however, that he thought he had solved the mind/body dilemma originally posed so trenchantly by Descartes. He only maintained that while science had set the stage for a more sophisticated handling of the problem, the very presuppositions of science were being called to account by the analysis. This meant for James that one place to look for a solution was beyond language, but nevertheless within the realm of experience. For this reason, at the very end of his life he enjoined psychologists to keep an open mind and to study the fall of the threshold of consciousness. In the subliminal extension of the horizons of awareness, we find alterations that point to the very core of life and identity. But we will not *understand* these alterations, he said, either in this generation or the next.

The James-Lange Theory of Emotion

James-Lange Theory of Emotion was posed by both James and Lang at approximately the same time (hence the name James-Lange) and suggests emotions are a consequence of our physiological responses to external stimuli followed by identification of the emotion by examining the physical responses. So, some external stimulus produces a physiological response in your body. Then, you examine this physiological response and identify the emotion you are

experiencing based on the physiological response. For example, you see a bear in the woods, and you begin to tremble. You then identify the fact that you are trembling and conclude that you are afraid..."I am trembling, therefore I am afraid."

If you ask someone to describe what an emotion is, they might say it is a feeling, sentiment, reaction, passion, excitement, or sensation. Another definition of emotion is it is a spontaneous feeling arising from a person, thing, or experience. Emotions are unique to each individual, are perception based, and subjective experiences. It could be argued that emotions are the sole reason for therapeutic interventions.

People go to counselors because they do not like how they feel. In other words, their emotions are too strong and upsetting or the individual does not appear to have emotions at all. Some people have too much of one emotion versus how they want to feel, e.g. depressed individuals are mostly sad and desire to feel happy again. Therefore, every psychological theory, even cognitive behaviorism, has a goal to ultimately alter the person's emotional state in a positive way.

There is an infinite number or ways to describe emotion. Here are a few of the more common ones:

Amusement	Disgust	Helplessness	Satisfaction
Anger	Doubt	Hope	Seren
Annoyance	Elation	Hurt	Shame
Anxiety	Embarrassment	Interest	Shock
Boredom	Empathy	Irritation	Stress
Calm	Envy	Joy	Surprise
Contempt	Excitement	Pleasure	Tension
Content	Fear	Powerlessness	Trusting
Courage	Friendly	Pride	Worry
Delight	Frustration	Relaxed	
Despair	Guilt	Relieved	
Disappointment	Happiness	Sadness	

Primary versus Secondary Emotion

Primary emotions are the first emotions a person feel consequent to an event. These emotions are often then masked by secondary emotions. Secondary emotions are ones that are felt the most. They can also make it difficult to discover the deeper problem at hand.

Most theories of emotion are based on physiology, thought, and the actual emotion. The basic questions are:

- In what order do these occur?
- Do we think a certain way because of the emotions we feel, or do we feel emotions because of how we think?
- In terms of physiology, do we feel emotions because of the perception of our body reactions, (e.g. my heart is beating fast, my blood pressure has risen, I'm breathing faster- therefore I am scared or anxious) or do we have a physical reaction because of the emotions we are feeling?

Each of the following psychological theorists has their own answers to these questions.

Key People & Their Theories (with "Bear" examples)

Walter B. Cannon

Walter B. Cannon was an American Physiologist who coined the phrase "fight or flight" and the word homeostasis. "Fight or flight" refers to the response that animals and people have to a threatening situation. Homeostasis is the tendency of a system to remain in a stable state. If there is a change in the system, the system will somehow compensate to regain that homeostasis.

Walter Cannon and Philip Bard worked together to develop the Cannon-Bard theory of emotion. They believed emotions come first and physical reactions come second. For example, a person sees a bear and is afraid. Then the person has the physiological changes of rapid heartbeat and breathing, sweating, and adrenaline that prepares a person for "fight or flight."

Bear (Event) => Fear (Emotion) => "Fight or Flight" response (physical)

James-Lange theory

The James-Lange theory of emotion, proposed by William James and Carl Lange, a Danish physiologist, is the opposite of the Cannon-Bard theory. Both suggested that *emotion is due to perceiving changes in the body*. This became known as the *James-Lange* theory. As James (1890, pp. 449-450) wrote. This theory states that an individual has a physiological response to a stimulus first, and then experiences an emotion based on his or her perception of the physiological response. Therefore, using the same example as the above paragraph, a person sees a bear and starts trembling, breathing faster, and sweating.

The person interprets these physical symptoms as resulting from the emotion "fear," so he or she consequently feels afraid. James and Lange stated that the perception was an important piece of this puzzle. Not everyone has the same emotions for a given stimulus even if they experience the same physical responses, e.g. sweating could mean nervousness, anxiety, fear, or even passion depending on the perception of the individual.

Bear (Event) => "Fight or Flight" response (physical) => Emotion (Fear).

What is the James-Lange theory?

My theory...is that the bodily changes follow directly the perception of existing fact, and that our feeling of the same changes as they occur is the emotion...that we feel sorry because we cry, angry because we strike, afraid because we tremble...

Emotion is commonly associated with bodily reactions, specifically *autonomic nervous system activation* such as shaking or sweating. As James put it, our feeling of change *is* the emotion. This implies that the emotion can be *simultaneous* with the body reaction: they are, in a sense, the same thing.

Some psychologists interpret this as meaning that the body reaction comes first, and the emotion comes quickly afterward. Schwartz offers an example of the latter pattern, in which there is a slight delay between the two:

Think about what happens when you narrowly miss hitting someone who has darted out in front of your moving car. Chances are your first act is to slam on the brakes and screech to a halt. After the car is safely stopped you notice that your heart is beating rapidly and your face is flushed with sweat; and then you begin to feel fear. As the James-Lange theory predicts, only after the car is stopped and the accident averted does the emotion occur. (Schwartz, 1986, p.90)

Some scholars distinguish between *weak* and *strong* versions of the James-Lange hypothesis. (A "weak" theory does not claim anything very controversial, while a "strong" theory may claim a lot but is less likely to be true.)

1. The weak version of the James-Lange theory is that *a person's awareness of emotion*, and experience of its aftereffects (shock, numbness, horror, elation, love) *may follow a bodily reaction*. One may be surprised by love, by horror, by pride, by remorse. We refer to "gut reaction" when "the heart sinks" or "the heart skips a beat" or something "turns your stomach.""

What are the weak and strong versions of the James-Lange theory?

2. The strong version of the James-Lange theory, which researchers are usually talking about when they refer to the James-Lange theory, is that emotions occur *only* after visceral reactions. This implies that *if you prevent a bodily response, there should be no emotion*.

Walter Cannon (1929) did a series of experiments designed to test the second, strong version of the James-Lange theory. Cannon cut the spinal cord of dogs so that no sensations from the viscera could reach the dog's brain. If emotion followed directly from perception of visceral responses (he argued) the dogs should no longer show emotion. However, the dogs with severed spinal cords still showed emotions of anger, fear, and pleasure. This contradicted the James/Lange theory. Modern psychologists agree that the strong version is false; emotions arise in the brain. Emotion is not a response to changes in the body.

Human emotion is a complex phenomenon involving both mental and physical factors. Everyone can recognize common emotions: happiness, anger, fear, surprise. Not everyone, however, interprets emotions the same way; people vary in their interpretation of the feelings

they experience. Not surprisingly, the understanding of human emotion has changed over time. Many theorists have attempted to explain why and how emotions are experienced.

The so-called evolutionary theories seek to explain the purpose behind the existence of emotions. Charles Darwin, in the late 19th century, was especially interested in the role that facial expressions and body language play in human and animal communication. Darwin thought that basic emotions had evolved through natural selection because they were helpful for survival; he believed emotions were to be found in similar form across all cultural groups.

In the 1880s, William James, the influential American philosopher and psychologist, and Carl Lange, a Danish psychologist and physician-although working independently-both developed similar theories about the origins of human emotion. What is now called the James-Lange theory suggests that the autonomic nervous system sets off physiological changes in muscle tension, changes in heart rate, sweating, and so forth, in response to external events, and that what is identified as an emotion is an interpretation of these physical symptoms. This theory reverses common ideas of cause and effect. As James wrote in 1884, "we feel sorry because we cry, angry because we strike, afraid because we tremble," and not the other way around.

A few decades later, in the 1920s, Walter Cannon, a physiologist, expressed his disagreement with the James-Lange theory. One objection was the theory's failure to explain why the same physical symptoms were found in conjunction with more than one emotion; Cannon claimed, for example, that fear and anger are both accompanied by identical patterns of physiological phenomena. Cannon's work was expanded on, in the 1930s, by another physiologist, Philip Bard. The resulting Cannon-Bard theory, also known as the emergency theory, hypothesized that emotion and physiological arousal are simultaneous, neither one causing the other.

In the 1960s, Stanley Schachter and Jerome Singer developed their Two-Factor theory, which agrees in some aspects with both the James-Lange and the Cannon-Bard theories. What is significant about Schachter and Singer's theory is the idea that people experiencing signs of physiological arousal will look to the environment for an explanation; they will label the emotion

they experience according to their understanding of the events that are occurring. This theory attempts to deal with the problem of emotions that share the same physical symptoms.

Psychologists over the years revisit the various theories that their predecessors and colleagues have proposed to explain human emotion. The different sub disciplines of psychology each have their own perspectives that affect their approach to this complex subject: social psychologists examine the role of emotion in communication; cognitive psychologists seek to understand the relationships between cognition and emotion; and clinical psychologists are concerned with emotional disorders and their reflection in behavior.

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Picture yourself walking in the forest, ruminating on various philosophical matters. As you go deeper into the bush, you realize that you have lost your way. Stopping in a clearing to get your bearings, you hear a rustling off to the left and realize that a large black bear is ambling into the very same clearing. The bear takes notice of you and starts moving in your direction. As you pause, uncertain as to what to do next, you are reminded of a classic example posed by legendary philosopher and psychologist, William James.

In 1884, James published a seminal paper titled What is An Emotion in the philosophy journal Mind (there were no psychology journals around then). In this paper, he reasoned that human emotion followed a sequence of events beginning with an arousing stimulus (i.e., physiological arousal linked to the sympathetic and parasympathetic nervous system) which then triggered the corresponding emotion. In other words, do we run from a bear because we are afraid or are we afraid because we are running from the bear? While the commonplace assumption is that the bear is the source of our fear, James argued that this commonsense interpretation is wrong. It was James' contention that bodily changes result from the perception of the "exciting fact" which in term leads to the psychological sensation called emotion. Different situations trigger different physiological changes which in turn lead to different

emotions. It was this observation that formed the basis of what would be termed the James-Lange theory of emotion.

As might be expected, the James-Lange theory met with opposition, most notably by Walter Cannon and Philip Bard who, between them, proposed what is known as the Cannon-Bard theory in the 1920s. This theory maintains that the psychological state we know as emotion is the direct consequence of the stimulus and that the physiological changes were the result, rather than the cause of emotion. In other words, Seeing the bear makes us afraid and the physiological changes linked to fear occur as a result.

Dissatisfaction with the two prevailing theories of emotion led to a third theory expounded in the 1960s by psychologists Stanley Schacter and Jerome Singer. Titled the Two-Factor Theory of emotion, it states that emotion is mediated by two factors: physiological arousal and cognition. We often can not tell what emotion we should be experiencing based on physical arousal alone. Therefore, cognition of the situational context is needed to determine the appropriate emotion. Of course, when the bear is right in front of you, little interpretation is needed. To this day, each theory has its own proponents.

While you stand there rapt in speculation, the bear (who is no doubt puzzled by your odd behavior in not running) continues to approach you. You note this in passing and edge backwards slowly but surely. You think, which is coming first? The emotion or the physiological sensation associated with the emotion? Your heart is certainly pounding and you are certainly afraid but the exact sequence is a mystery as you are too busy turning and running.

The bear, no doubt thinking that lunatics are not good to eat, does not pursue and you in turn stumble onto a familiar trail that leads you back to your campsite. It occurs to you that for future philosophical ventures in the woods, it would be best to bring along a fellow enthusiast.

The mainstream definition of emotion refers to a feeling state involving thoughts, physiological changes, and an outward expression or behavior. But what comes first? The thought? The physiological arousal? The behavior? Or does emotion exist in a vacuum, whether or not these other components are present? There are five theories which attempt to understand why we experience emotion.

From what we said, we can sum up the theories of emotions as follow:

James-Lange Theory

The James-Lange theory of emotion argues that an event causes physiological arousal first and then we interpret this arousal. Only after our interpretation of the arousal can we experience emotion. If the arousal is not noticed or is not given any thought, then we will not experience any emotion based on this event.

EXAMPLE: You are walking down a dark alley late at night. You hear footsteps behind you and you begin to tremble, your heart beats faster, and your breathing deepens. You notice these physiological changes and interpret them as your body's preparation for a fearful situation. You then experience fear.

Cannon-Bard Theory

The Cannon-Bard theory argues that we experience physiological arousal and emotional at the same time, but gives no attention to the role of thoughts or outward behavior.

EXAMPLE: You are walking down a dark alley late at night. You hear footsteps behind you and you begin to tremble, your heart beats faster, and your breathing deepens. At the same time as these physiological changes occur you also experience the emotion of fear.

Schachter-Singer Theory

According to this theory, an event causes physiological arousal first. You must then identify a reason for this arousal and then you are able to experience and label the emotion.

EXAMPLE: You are walking down a dark alley late at night. You hear footsteps behind you and you begin to tremble, your heart beats faster, and your breathing deepens. Upon noticing this arousal you realize that is comes from the fact that you are walking down a dark alley by yourself. This behavior is dangerous and therefore you feel the emotion of fear.

Lazarus Theory

Lazarus Theory states that a thought must come before any emotion or physiological arousal. In other words, you must first think about your situation before you can experience an emotion.

EXAMPLE: You are walking down a dark alley late at night. You hear footsteps behind you and you think it may be a mugger so you begin to tremble, your heart beats faster, and your breathing deepens and at the same time experience fear.

Facial Feedback Theory

According to the facial feedback theory, emotion is the experience of changes in our facial muscles. In other words, when we smile, we then experience pleasure, or happiness. When we frown, we then experience sadness. it is the changes in our facial muscles that cue our brains and provide the basis of our emotions. Just as there are an unlimited number of muscle configurations in our face, so to are there a seemingly unlimited number of emotions.

EXAMPLE: You are walking down a dark alley late at night. You hear footsteps behind you and your eyes widen, your teeth clench and your brain interprets these facial changes as the expression of fear. Therefore you experience the emotion of fear.

V. CONCLUSIONS

Psychologists and behaviorists have been proposing theories on human emotion for much of the modern era. Emotions are considered to be inner feelings or states of mind that are associated with a physical change and are expressed by an outward behavior. In the scientific world, experts attempt to discover which comes first: the mental feeling, the physical change or the outward behavior.

History

1. The idea of theories of emotion can be traced back to the Ancient Greeks and the cultural explosion of the Iron Age. The Stoics, Plato and Aristotle all had their own ideas about how human emotions work. The later works of scientists like Descartes and Spinoza in the 17th century and Hume in the 18th century also show complex theories of emotion. By the 19th century, empirical research began to improve and some of the more widely accepted emotional theories were created. Two of the best-known theories of the time were established by William James and Carl Lange, and Walter Cannon and Philip Bard. In the early 20th century, other theorists like Magda B. Arnold, Richard Lazarus and Robert Plutchik added greatly to the field, which began to flourish.

Function

2. Theories of emotion are largely concerned with the relationship between the emotion itself and the results of the emotion. By establishing why and how an emotion occurs and leads to a result, scientists can better understand human behavior. Emotion often rules the way that humans live; usually some emotions encourage positive behaviors and some stressful emotions lead to negative behaviors. Emotions can have helpful or harmful effects on human physiology, such as in the case of anxiety leading to or aggravating a number of health problems like gastrointestinal disorders and headaches.

Types

3. Most theories of emotion fit into one of two categories: cognitive and non-cognitive. Cognitive theories assert that emotion comes from the prefrontal cortex, while non-cognitive theories describe emotions as instinctual, coming from the amygdala. Theories of emotion are also divided into categories based on what order they state emotional experiences occur in. Some theories, such as the James-Lange theory and the Schacter-Singer theory, state that people experience physiological arousal before the emotional reaction to an event occurs. Other theories, like the Lazarus theory, assert that physiological arousal occurs after or at the same time as the emotional reaction.

Features

4. The most well-known theories of emotion share some things in common, but usually differ on the specifics. The James-Lange theory of emotion and the Schacter-Singer theory of emotion both give the order of emotional experience as an event followed by physiological arousal, which is then followed by an interpretation of the event's relationship to the arousal and an emotional reaction. However, the James-Lange theory explains that the physical changes cause the emotions while the Schacter-Singer theory describes emotions as a direct result of the interpretation. Another major theory, the Cannon-Bard theory, states that arousal and emotional response occur at the same time following an even. The Lazarus theory also pairs arousal and emotion together, but adds an interpretation step after the event.

Final Considerations

5. All of the classic theories of emotion have fallen under criticism at various times, though many modern theorists still use them as a basis to work from. Some more recent theories are the affective events theory, which explores time as it is related to the influence on behavior of emotional reaction to events, and the modern cognitive theories, many of which connect interpretation to emotional response. Neurobiological theories explore

human emotion by describing the evolution of the limbic system in many different animals, taking the physiology as the root of emotional reaction.

Different theories were created to explain the way we experience emotions and the connection between our mind and body. Some of these theories were eliminated, some had few supporters and some have been passed on from generation to generation as a highly supported belief. Two of the most well known theories of emotion are the James-Lange Theory and the Canon-Bard Theory. There have been a lot of arguments as to which one is correct. The James-Lange Theory has received a lot of criticism because it seems to go against what we believe to be commonsense. According to Pert, although the James-Lange Theory and the Cannon-Bard Theory seem to be opposites, they are both correct. She believes that they are simultaneous; a two way street. Pert came to the conclusion after being asked which of the two theories she thought was correct.

William James and Carl Lange proposed one of the first theories of how our emotions work. They claimed that we perceive a stimulus which affects the autonomic nervous system. This then creates a specific response. Accompanying the response is an increase in things such as heart rate, blood pressure and breathing. This theory is based on the experience of changes in the body. The stimuli causes a change in the body state and being aware of it, the person associate that change with an emotion. This theory would wrongfully exclude people who are paralyzed since they do not feel in certain parts of their body. This is because, though paralyzed, they still experience emotion. This theory is known as the James-Lange Theory of emotion.

With the James-Lange Theory, if someone was walking on an isolated street and someone jumped in front of them, they would scream and then experience fear. The same would happen with a positive emotion. If someone saw a cute baby, they would smile and then feel happiness. This is considered a peripheral theory where the action is the cause of the emotion.

Other theories came up with time and were shown in this paper always comparing these new theories with the one of James-Lange Theory of emotion.

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