Module:
Psychological Foundations of Mental Health

Week 4
Beyond basic cognition and emotion

Topic 2
Evaluation: interpretation and appraisal – Part 1 of 3

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Lecture transcript

Slide 3
In the previous session I discussed attitudes and Dr. Peters briefly introduced the concept of appraisals-- interpretations of the world around us. The current session will build on these topics-- in particular, in four parts. I and another speaker will discuss in more detail what appraisals are, how they shape our thoughts and beliefs, and what changes how we appraise the world around us.

A major focus is on the relationship between appraisals and emotions, which is a large area of psychological research and is particularly relevant to psychological well-being. We will also cover how appraisals influence people's ability to cope with stressful situations. For example, in the last session, Dr. Pile will discuss the role of appraisals in mental health in particular.

Slide 4
Look at this picture. What do you see? Do you see a rabbit, or do you see a duck? In fact, it is possible to see both. Here's a hint-- the rabbit's ears are on the beak of the duck. Can you spot both of them?

You may be familiar with this or other examples of pictures that can be perceived in different ways. Besides pictures such as the one here, there are many occasions on which we can interpret the same things in different ways.

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For example, how would you describe two dogs running? You may think that the one behind is chasing the other or that the one in front is leading the second. Perhaps you interpret this situation as playful behaviour, or instead you may think that the dogs are fighting. Clearly, people can interpret this situation and many others like it in different ways.

Psychologists call these appraisals-- defined as a particular set of psychological interpretations of the current situation. Psychologists are interested in appraisals because they are highly relevant to understanding how emotions-- for example, sadness-- change the way people view the world. For example, people who are sad may interpret a new situation in a negative way, potentially making them feel even worse.

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Slide 6
One of the most famous studies on how emotions relate to our interpretations of the world around us was conducted by Strack and colleagues in 1988. These researchers tested the facial feedback hypothesis, which states that our brain uses information of facial muscle contraction to conclude how we feel. In other words, our bodily expressions directly change the way we feel. For example, standing tall may make you feel more self-confident. Strack and colleagues investigated this in a now classic study.

In their famous pen study, they asked participants to hold a pen in their mouth while reading comics. Participants were told that they had to hold the pen in their mouth as part of an investigation of pen use for people with hand injury. However, the real reason was different. Participants were instructed to either hold the pen with their teeth or with their lips-- as illustrated in these photographs.

As you can see, holding a pen between the teeth looks like an expression very similar to a smile. Holding the pen between the lips instead mimics sadness. What these researchers found was that those participants who held the pen between their teeth thought that the comics were funnier than those who held the pen between their lips. It seems that the emotions-- for example, joy-- came after their expressions.

These findings are remarkable. Intuitively, it seems to make more sense that we smile because we feel joy rather than the other way around. But these results seem to indicate the opposite-- we experience joy because we express a smile.

In fact, Strack and colleagues were not the first ones to look at the perhaps surprising effect of emotions and expressions. Let's go a little back in time.

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Almost a century before Strack and colleagues' pen study, William James and Carl Lange independently developed what we now call the James-Lange theory. This theory goes right against most people's intuition. James and Lange considered opposites, such as, do we feel first sad, and then we cry, or do we cry, and then we know that we're sad?

According to them, it is the second. We know that we are sad because we are crying. Or in William James' own words, "Common sense says that we lose our fortune, are sorry, and weep-- we meet a bear, are frightened, and run. The hypothesis here to be defended says that this order is incorrect. The more rational statement is that we feel sorry because we cry, angry because we strike, and afraid because we tremble."

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Let's put that theory into a schematic. What is the correct sequence of events according to the James-Lange theory of emotions? First, there is some stimulus to which people respond. As an example, let's say this is a growling dog.

Next, people perceive and interpret this stimulus. This perception and interpretation leads to a direct physiological response, such as a change in autonomic arousal. In the case of the growling dog, this might be a faster heartbeat, faster breathing, and sweating.

According to the James-Lange theory, the emotion is experienced after this physiological response. People conclude that they must be afraid because they have a fast heartbeat, breathe fast, and sweat. See? This is very different from the intuitive idea that people have a fast heartbeat, breathe fast, and sweat because they are frightened.

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It is hardly surprising that the counter-intuitive claims made by the influential James-Lange theory have received a great deal of criticism besides praise. In particular, the James-Lange theory has some limitations, which is not to say that it is a poor theory. In fact, it is one of the most influential theories of emotion.

Cannon and Bard were amongst the various people who criticised the James-Lange theory. In particular, they argued that it is incorrect based on their own research. The first criticism they expressed is that emotions do not necessarily change when the viscera-- the abdominal organs-- are disconnected from the central nervous system.

Why is this a problem for the James-Lange theory? Well, remember that the James-Lange theory argues that emotions occur in response to physiological changes. People's emotional experiences should thus not change when there is no longer a neural connection between the viscera.

Likewise, when a physiological change is artificially induced in the viscera, this does not always lead to a spontaneous emotion. Furthermore, these physiological changes are sometimes quite slow and happen after people already experienced the emotion.

Also, the James-Lange theory cannot account for the fact that sometimes the same physiological changes are associated with different emotional experiences. For example, a fast heartbeat, breathing fast, and sweating should-- according to the James-Lange theory-- trigger fear. However, people who are exercising do not spontaneously become scared, even though their physiological responses are very similar.

Based on these criticism, should we abandon the James-Lange theory as incorrect, or is it possibly just incomplete?

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In response to the limitations of the James-Lange theory, Schachter and Singer proposed that the James-Lange theory of emotions was indeed incomplete rather than entirely incorrect. They proposed a new model of emotions that placed emphasis on both physiology as well as cognitive appraisals-- the interpretations of the situation that this session introduced earlier.

In particular, Schachter and Singer argued that the emotions that people experienced are determined jointly by people's perceptions of their physiological state, such as autonomous arousal, and by people's appraisals of the situations in which these physiological changes occur.

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To give you an idea of how this process works, consider the following experiment these researchers conducted. They first divided participants into two groups. Those in the experimental group received a shot of adrenaline, which leads to increased autonomous arousal and the physiological characteristics of anger. Participants in the other group received instead a salt solution shot, which does not have any effect on autonomic arousal. These people were in a placebo condition. Thus, the groups differed at the level of physiology.

Next, Schachter and Singer further split up the adrenaline shot group. Half of this group were told that the injection induced arousal, whereas the other half were not told about this. Thus there were three groups in total.

First, there were those who experienced high arousal and knew that this was caused by the injection. Second, there were those who experienced high arousal and did not know that this was caused by the injection. And third, there were those who did not experience high physiological arousal because they were given a salt solution-- a placebo condition.

Next, these researchers asked the participants a number of provoking questions, such as, how many men, besides your father, has your mother slept with? What do you think happened? Which of these three groups felt most angry?

Schachter and Singer found that participants who received the adrenaline shot and did not know that this caused their high, autonomous arousal reported the most anger. Why? Because they experienced both the physiological signs of anger-- high arousal-- and interpreted the situation as provoking.

This was different from the other conditions. Those who were told that the adrenaline injection would increase their autonomous arousal did not feel particularly angry. They instead attributed their arousal to the injection rather than to the questions.

Those in the placebo condition may have appraised the questions as provocative, but their arousal levels were relatively low, therefore they did not feel particularly angry.

What these findings suggest is that emotions are indeed jointly determined by physiology and appraisals. Only when people experience physiological arousal and interpret the situation as provocative that they feel angry.

Slide 12

In the previous lecture I introduced Schachter and Singer's theory of emotions. This theory builds on the James-Lange theory of emotions, but emphasises the importance of appraisals. In particular, Schachter and Singer stress that both people's perceptions of their physiological state, such as autonomic arousal and appraisals of the situation, influence what emotions people experience.

The theory by Schachter and Singer has three ancillary positions. In particular, Schachter and Singer make three intriguing claims. We'll go through the most important two and explain what they mean. After that, I will give you an example of their counter-intuitive implications based on the classic study.

The first proposition is that when an individual has no causal explanation for an arousal state, he or she will label arousal in terms of available cognitions. What that means is the following-- if someone experiences high arousal, such as excitement or stress, and he or she does not know where this originates from, then the person will use available appraisals to decide on a cause for their state.

For example, if you were secretly given adrenaline, which increases your arousal, and did not know about this, you may look at the situation you are in and blame it on something in that situation-- say, you might attribute your arousal to the learning session, concluding that learning is very stressful. Note that this would be a false attribution, or misattribution. In this setting, the real reason for your arousal is the secretly administered adrenaline.

The second proposition is that when someone has an appropriate explanation for their arousal, then they will not use this alternative cognitive labelling strategy. This is essentially the opposite to the first proposition. If you know that you have been given adrenaline, which causes your high arousal, then you will not blame your high arousal on something else.

These two propositions relate to the process of misattribution-- of falsely blaming particular circumstances as the reason for your emotion. Let me give you an example.

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In a classic study, Dutton and Aron investigated the misattribution of emotions. For this purpose, they conducted an experiment that is now known as the scary bridge experiment. In this experiment, male participants had to walk across a bridge suspended over a great depth.

Although perfectly safe, the participants became quite stressed when doing so. A little after reaching the other side of the bridge, while still high in arousal from the scary bridge, these male participants were asked several questions by an attractive female experimenter. After these questions, the female experimenter offered the men her contact details in case they had further questions about the study.

What these researchers found was that these male participants were more likely to contact the female experimenter compared to another group of men who had walked a non-scary bridge instead. What is going on? Why did the men who walked the scary bridge contact the female experimenter?

According to Dutton and Aron, the reason for this was the men's misattribution of their arousal. After walking across the scary bridge, the men's arousal was high. When talking to the attractive female experimenter, they falsely attributed their arousal to the experimenter. They interpreted it as feeling attracted to her. As a result, they were more likely to contact her than men who had walked the non-scary bridge, and were therefore less aroused.

This experiment is a classic demonstration of misattribution of emotions based on appraisals that people make of the situation. Since then several other studies-- often better designed and conducted better-- have confirmed that people tend to misattribute their physiological state based on their appraisals of the situation.

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Schachter and Singer's theory of emotion remains one of the most influential theories of emotions to date. In particular, their suggestion that people's appraisals of the situation can determine what emotions we think we experience is wildly influential. However, besides appraisals influencing emotions, emotions also influence appraisals. That is to say, our emotions colour the way we interpret our environment.

A pioneering investigation of how emotions influence our appraisals of the world around us was conducted by Smith and Ellsworth in 1985. In this study, they asked people to describe in detail several common emotions, such as shame, pride, anger, and many more.

They found important differences between these emotions. An obvious one is that sadness involves a more negative interpretation of events, and happiness more positive ones.

Fear and anger, while both negative emotions accompanied by high levels of physiological arousal, differed more subtly. Fear involves appraising events with great uncertainty, whereas anger is the opposite. People who are angry feel very confident about what is going on in their surroundings. These investigations help us to understand how emotions change the way people interpret and interact with their environment.

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Here are some examples of the surprising impact of appraisals caused by emotions on people's behaviour. In 2001, Lerner and Keltner published a study of anger and fear. Recall that these emotions differ in terms of their certainty appraisals.

Fear makes people interpret their environment as insecure or risky, whereas anger involves, instead, appraised certainty. These researchers first measured people's fear and anger, and then gave them the choice between a risky and safe option.

The researchers found that fearful participants were far less likely to choose the risky option than the angry ones. In particular, because angry participants feel a greater sense of certainty about their environment, they are less averse to risk. Essentially, they are more optimistic about a

positive outcome.

Experiments like these show how important appraisals are. The emotions in this study were not directly related to the decisions that people had to make, yet they nonetheless influenced how people interpreted the choices and how they decided.

In the next lecture, we will look closer at appraisals and how they relate to stress and coping.

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