Module:
Psychological Foundations of Mental Health

Week 4
Beyond basic cognition and emotion

Topic in Action
Metacognition – Part 4 of 4

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Lecture transcript

Slide 2
So today we are going to think about worry and rumination in mental health conditions.

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There are a number of clinical problems for which worry and remediation occur. One we discussed in the last lecture was generalised anxiety disorder. This affects about 7% of the population, where they worry uncontrollably about lots of different events and topics, with the worries always changing, but always a focus in their mind. The core feature of generalised anxiety disorder is uncontrollable worry, and this must have been occurring for at least six months.

Major depression is another disorder where repetitive negative thinking features highly. Rumination, often previously described as depressive rumination, is a key feature of the clinical problem. And people with depression often ruminate about their symptoms themselves, or the fact that they're not able to do what they need to do.

However, worry and rumination also occur across a number of other psychological problems. For example, people with social anxiety will worry a lot before social events, often referred to as anticipatory anxiety, and they'll also think about the event after they've left the social event. And that would be rumination, but again, in this context it's called the post-mortem.

Similarly, in panic disorder, obsessive compulsive disorder, and psychosis, worry and rumination frequently occur.

Slide 4
So what about the impact of worry? What we know is that when anybody worries, it leads to a decrease in their mood, so they feel more low, and an increase in anxiety. This is even more the case for people who have psychological disorders, such as generalised anxiety disorder.

We also know that having worried, and then the person is trying to focus on something else, they'll be more likely to have more negative thoughts. Another unhelpful impact of worry is that it takes up executive functioning resources that are needed to deal with the task at hand. We talked about that

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in relation to attentional control in a previous lecture. This in turn leads to problems of concentration, which our clients with emotional disorders often report.

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Thinking about rumination, this also has a wide-ranging impact. What research has shown is that when people ruminate, or brood, as it's also been termed, in response to a stressful situation, they have more prolonged periods of depression in the future. Rumination also predicts the likelihood that you will have a future episode of depression in people who are currently not depressed. Rumination also predicts symptoms of depression in depressed individuals, and it also is linked to overgeneral thinking style, which is characteristic of people with depression, and problems with problem solving and difficulties in remembering things, which are known as memory biases.

Slide 6
So what keeps worry and rumination going? In the last lecture we were thinking about cognitive processes, interpretation bias, the tendency to interpret things negatively, and attentional control. And from previous lectures, we've also heard about how attentional bias could operate in anxiety. And that certainly does apply to worry.

Something I want to introduce here today is something called mentation style. What we think, we can either think in words and sentences, so verbally, or more in images and mental pictures. What we find is that people, when they worry or ruminate, tend to have a more verbal style of thinking, with less imagery. And often, their thoughts are more generalised and abstract. We also know that this verbal, abstract style of thinking maintains negative thinking.

Slide 7
So the question is, does the verbal nature of worry maintain worry? Caroline Stokes asked high worriers to come along and be part of an experiment where they were either asked to worry in their normal words and sentences, so verbally, or they were asked to think about their worry topics in a more imagery-based form of thinking.

So in the experiment, they conducted the breathing focus task which we heard about in the previous lecture, where the person had to concentrate on their breathing. And at certain intervals, they were asked to indicate whether they were indeed focusing on their breathing or had any thoughts intrusions, and they categorised their thought intrusions as positive, negative, or neutral.

Participants were then either trained to worry in verbal ways, or to worry in imagery, watching the negative outcomes unfold. They then thought about their main worry topic in either verbal or imagery form, and then completed the breathing focus period again.

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So turning to the results, as you can see from the graph, with the verbal group in light blue and the imagery group in dark blue, before we asked them to worry, the groups didn't differ, as one would expect. But then when they were asked to worry either in words and sentences or in mental images, we found that the breathing focus following that work period, there was the normal increase in intrusions in the verbal group, but there was a decrease in intrusions in the imagery group. So this suggests that the normal verbal style of worrying actually drives negative thoughts and perpetuates worry's uncontrollability.

So the question is whether rumination in its verbal abstract form will certainly promote rumination. And that's a question that will have to be answered by other research.

Slide 9
So what about rumination? Does abstract thinking, which is known to be common in rumination, does that have a role in keeping rumination going? Ed Watkins and his group developed something called concreteness training, using a cognitive bias modification approach.

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What he did is he had dysphoric participants-- so people with low mood. And they were either given a controlled condition, or they were asked to try and learn to think more concretely. The concreteness training involved using lots of mental imagery, concentrating on the sensory details in the moment of the image unfolding, noticing what was specific and distinct about the context of the event.

And what Ed Watkins' group found was that people who had completed concreteness training had less rumination afterwards, they had fewer depressed symptoms reported, and they became more concrete in their thinking style than the people who had completed the control condition, where concreteness wasn't being modified. So this suggests that the abstract way of thinking in people who re dysphoric, and therefore would be tending to ruminate, actually isn't very helpful and can perpetuate rumination.

Slide 10
In another line of research I'd like to mention today is in relation to rumination, but it's trying to look at how different cognitive processes may influence each other or operate at any one time. This is based on our earlier work in 2006, which postulated the combined cognitive biases hypothesis, and has been taken up more recently by Jonas Everett and his colleagues, in relation to depressive rumination. So he developed a very novel task, where you are trying to assess both attentional bias, interpretation, and memory all in one task.

People will look at a series of random words on screen, and we can assess their attentional bias by seeing where their eyes fixate. In this case, we've got born winner am loser I, and a negative attentional bias would focus on loser, where a positive one might focus on winner. Then the task has to then rearrange those words using five out of the six words to form a sentence and then order them. Here,

We can then assess the interpretation bias. So the person can produce a sentence, I am a born winner, which would be a positive interpretation, or I am a born loser, which would be a negative interpretation. Later on, the person can be tested to see what they remember of the sentence that they formed and the words that were produced. So in this way, the saying task can assess different cognitive processes, and we can see their relationship. What Jonas Everett found was that indeed, these different biases of attention, interpretation, and memory are related to rumination and also relate to each other.

Slide 11
OK, so let's now take a bit of time to pull together the different things we've been hearing about in this and the previous lecture.

In 2012, Andrew Matthews and I proposed a model of pathological worry to try and understand why people have negative thoughts occur, and why this leads to streams of worry.

Think for a moment about being at home and trying to do an essay. So your task at hand is doing the essay. You are able to concentrate on that, because there aren't other competing ideas in your mind. Then you happen to glance out the window and notice that it's sunny. And at this point, you think, summer is coming up. Oh, in the summer, there are exams. Now, here there's potential for there to be a representation of threat, that exams are terribly hard and they're very scary.

So at this point, there are two different thoughts that could dominate in your mind, thoughts around the essay topic and getting your essay done, and thoughts around the scariness of exams, or the threat of exams. What we have here is a situation where two types of representation will be in mutual inhibition, trying to compete with each other for dominance. That will be represented by an upward arrow and a downward arrow in competition with each other.

But what determines whether the threat thought dominates? Well, as you can see, at the bottom

here we have these involuntary bottom up influences. These are preexisting cognitive biases, such as attentional bias to threat, or interpreting things negatively, and other habitual thought patterns, such as, I'm no good at this. These will reinforce representation of threat.

When the representation of threat is activated, this will try to inhibit the benign task representation, or in this case, thinking about your essay. This is represented here by a stronger arrow pointing upwards.

So what can help keep your mind focused on the task at hand? Well, we could have some help from top down attentional control, that could direct your attention to really focus on the essay. However, as we saw before, people with generalised anxiety disorder and worry have less attentional control, and so they're less able to focus on the task at hand. So they have less activation from these top down influences on representation of the task at hand, which is the essay, and so again, you get this less and smaller arrow downwards, from the task related representation trying to inhibit the representation of threat.

And so the competition wins out where the representation of threat is more strongly activated. This leads to a negative thought, and we know for people who worry, that once you have one negative thought, that tends to lead onto a stream of worry. What we know about verbal worry is that verbal worry itself will lead to more negative thoughts, and it will also take up and use more attentional control resources. This is represented by the arrow from the attentional control box down to the streams of worry. We also know that once worry is operating, that there's more opportunity to attend to threat and interpret things negatively, so the stream of worry will continue.

Slide 12
So what we were just thinking about was our model of worry. What we don't yet know is whether this model would also apply to rumination. There are some hints that that might be the case. If we think over what we've been thinking about in the last lectures, we know that attentional control is taken up by rumination in depression. We know that bottom up processes like attentional bias and interpretation bias can operate in depression, and we know that the mentation style in rumination is very abstract and generalised, with less imagery. So whilst at the moment, the worry model only applies to worry, we're currently conducting some new research to determine whether it also may apply to rumination in depression.

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In relation to rumination, the dominant model was developed by Nolan Hoeksema in 1991, and she updated it in 2008. So what she proposed is that rumination prolongs depression through different mechanisms, first of all by enhancing negative thinking, Secondly, by interfering with effective problem solving, thirdly, by interfering with instrumental behaviour-- so leading for people to find it more difficult to do things-- and fourthly, by eroding social support. I think this is suggested by the idea that if people ruminate a lot, that actually initially, their family and friends may be supportive, but over time, they may withdraw their support because their person is continually engaging in rumination.

Slide 14
So finally, let's think about psychological treatments for worry and rumination. Cognitive behaviour therapy is the main treatment for depression and generalised anxiety disorder. And cognitive behaviour therapy is most successful when it uses a disorder specific protocol. So the different clinical problems are treated with slightly different clinical approaches, all with cognitive behavioural therapy at its core.

For generalised anxiety disorder, we know that worry is at its core. And what cognitive behaviour therapy needs to do is to change the unhelpful cognitive processes that are maintaining worry and help overcome the depletion of attentional control in order to enable people with generalised anxiety disorder to shift their mental focus away from work and onto the task at hand.

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Turning to depression, this also tends to be treated by CBT. And that improves changing the negative thoughts themselves using thought challenging techniques. These thought challenging techniques will address the negative interpretations and also draw the person's attention to more positive ways of thinking.

More recent approaches to rumination have actually directly targeted rumination. For example, Ed Watkins has developed a new protocol for rumination-focused CBT, and that seems to have encouraging results.

Slide 15
OK, so drawing the lectures together on both worry and rumination in the general population and mental health, we can see that both of these processes are common across the population, particularly when people are feeling high levels of anxiety or low mood, and that they're maintained by different cognitive processes that keep the person focused on these negative forms of thinking.

We know that these negative forms of thinking are not helpful, in terms of the person's mood or ability to engage and do the task at hand. And so treatments need to enable people to shift away from worry and rumination.