

WEEK 6 ANSWER TO QUESTION 2

STEP 6.7 ASK MARK

So question two is, "If our prefrontal cortex is sending us signals to inhibit our actions, to not act in the same way as we have seen others act, even though they are very influential figures in our lives, and we are young and our prefrontal cortex is not fully developed, and we are flooded with emotion, how are we supposed to do what they say and not what they do?" This is a complex, multifaceted question, and I'll just pick out some of the main elements of it.

This idea of the prefrontal lobes being there to prevent us from acting rashly on feelings-- the prefrontal lobes are indeed developed in order to inhibit purely instinctual responses. Purely instinctual responses are very valuable things. That's our phylogenetic inheritance, tools for living, things that we just know. When I feel like this, that's what I do. Fear, boom, rage, boom, and so on.

But the world is much more complicated than these stereotyped instincts can accommodate. And so we have to develop more subtle ways, more nuanced ways of behaving, guided always by the underlying instinctual feeling states, but allowing with thought, which the frontal lobes, more than any other part of the brain, facilitate -- thinking up flexible solutions that are tailored to the particular nuances of the current situation. So yes, the frontal lobes inhibit impulsive actions.

But where does this thinking come from, that the frontal lobes replace instinctual, impulsive actions with? Well, it comes from learning from experience. It's an internalisation of how the world works. It's a forming of predictions as to what works and what doesn't work, on the basis of experience. And in earliest childhood, that experience of the world, of how to meet our needs in the world, is mediated primarily, in the typical case, by parents. And so the internalisation of what parents do for us is a very important part of what frontal lobe development entails, especially in the early years and then again in adolescence, when there's a massive spurt of frontal cortical development.

So it's not a matter of the frontal lobes-- to come back to the question-- it's not a matter of the frontal lobes enabling us to not do what we see others do. In fact, the frontal lobes in their primary, maturational guise, as they're unfolding, what they're doing is precisely internalising what others do for us so that our frontal lobes can then take over what the parents do for us. And our frontal lobes can do it for us ourselves. And we can internalise

all sorts of unfortunate ways of dealing with our feelings. This is why parental influences are so terribly important in mental health.

There's also this concept, the famous mirror neurons, which are primarily frontal. They are premotor-- the secondary cortex of the frontal lobes is where the bulk of the mirror neurons are found. And what these mirror neurons do is exactly monkey see, monkey do. What I see you do, I find myself reflexively doing the same thing, a sort of imitation or contagion effect. And this is a pretty reflexive, pretty automatic sort of process.

It's only with later frontal maturation, once we learn to speak, and around the ages of five or six, when we start to internalise this-- it becomes self regulating in our cognitions rather than our cognitions just being rote internalizations of what's been done for us. An important additional step occurs. Then it becomes more voluntary, what the frontal lobes do. It's not so much just automatically echoing what we see around us and what is done for us, a pure mimicking of that. It becomes a process of reflecting upon those processes in words. So internal speech, the internalisation of a symbolic system, which is one order higher in the hierarchy of abstraction. So it's not just feeling, nor is it just objects and things that one concretely does about the feelings. It's the ability to think about what one does about the feelings. This is the third level. And that's a crucial step in prefrontal lobe development.

Here we have the capacity to reflect upon what we're doing, and thereby also to revise it. So we might have-- in the earliest layers or levels of frontal development, we might have internalised, just copying what's-- well, what did the question say? Doing what our parents do rather than what they say. But the subsequent capacity, to be able to learn to do what is said, overlays that.

Each of these layers of control is not to be overestimated. None of them is perfect. None of them is complete. There's always a force from below, and there's a dynamic interaction between the feelings coming from within and the learned abstractions, the kind of rules of how life works and what matters and how one should conduct oneself, all of this distillation and that abstract distillation of experience, both of ourselves and of our families and of cultures, and of previous generations embedded within those cultures, and so on. It's always a dynamic interaction between those two things.

But I wanted to finish answering this question with this point, that the capacity to be able to think about your thoughts, this re-representation of your concrete, embodied representation of yourself in the world, the ability to abstract and see yourself from the third-person point of view, as it were, and think about what you're doing and think about how you're acting-- this capacity to make these more automatic, more concrete ways of acting, to turn them into words, raises-- it makes it possible. This is the mechanism whereby you're able to revise what you're doing by looking objectively, as it were-- that is, from a third-person point of view, looking back upon yourself as if you were just another object.

This same vehicle is what is used in most psychotherapies, the talking therapies. The talking cure is all about that, becoming aware through reflection, becoming aware of what you do about your feelings so that you can have a second bite at the cherry, as it were, and try to change those internalised, automatic ways of doing what's been done and how you've always done things, and turning it into something more voluntary, where there is more agency, to refer back to the previous week, where we discussed agency. So thanks for that question.



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