

## Self Governing Neural Network system and Human brain

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How would you design a self-governing neural network system?

When the environment response matches the model output, everything is Ok.

When there is a discrepancy, it shall train the model on this new training example.

Which, of course, would not work.

That's because running training for just this example does not cut it. Neural network likely needs a significant change, and it takes time.

The system might be too busy right now, because an important discrepancy often means a crisis, so it needs a "scheduler" and a memory for this training example, so it can do training later.

And if something prevents the run, the scheduler needs to allocate processing time again until it is done. And until then the system needs to keep the experience in "unpacked" form, which occupies a lot of memory.

So, it is in the best interest of the system to run re-training soon, so the experience will become a part of the trained neural network, and the unpacked form of the experience can be disposed, and the scheduler will stop bugging the system with need for re-training.

Now let's look at the human brain. There are discrepancies between the expected and actual outcome. Some of them are large and affect valuable stuff like health or family members.

In crisis, the brain switches to "shock" mode and numbs emotions - for higher short-term efficiency. But it records what is happening for later processing.

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Emotion is just a way for the scheduler to grab attention and prioritize digestion of the experience. Unfortunately, some emotions are unpleasant, and an average Human is trying to avoid them. Which is no problem with the scheduler. It saves the experience in vivid colors and haunts the Human with bringing it back over and over in flashbacks until it will be digested.

Once the Human faces the experience and lets it be fully digested, the experience becomes part of the model, the unpacked version gets disposed, and related bad feelings are gone. But the process is very unpleasant and often seems unbearable. There are tricks to make it easier, of course.

So, the bottom line, Human brain is not broken. Indeed, all the low-level behavior is very, very reasonable. We just to stop that stupid and pointless fight against ourselves and let our brains do the job.

Oh, and do not fool yourself in any way. In ANY way. But that is a different subject.