

What makes you, you. Observations on the nature of intelligence.

Have you ever stopped in a busy high-street and just looked at all the people walking around? It is amazing how similar we all are but at the same time we are all unique.

What makes you, you and me, me?

I have been working in Artificial intelligence and machine translation for many years and what makes people tick is a constant question. If we think about the problem for a moment;

if I ask, "where you were born". You could say at home or Glasgow or any of myriad of places, all different from me.

If I ask, do you have kids, again we have lots of different answers, some the same as me, whilst others will be different.

For every question I ask about you, you will have an answer that may have common elements to me but will be substantially different. So there's the first piece of the puzzle. You are unique because of your memories. Even in identical twins, memories are different. They start to diverge the minute you are born. I know several identical twins and there are ALWAYS differences in their memory that separates them. One may like eggs the other hates them, one fell down a step the other is braver since he didn't hurt himself when he tried the steps. Simply put, your memories are unique.

Surely, People are more than just their memories. If you take all the memory away from someone what would be left? You would basically have a new born baby. If a baby did not have the capacity for memory what would happen. After a few years of life, the child would be a bigger version of a newborn. There are a few instinctual functions that may occur such a bladder control and basic feeding behaviour but that's it. Everything that defines us as an adult is learned from the environment. What makes you unique is what you learned, how you learned it and when.

So yes, people are more than their memories, the other piece is the mechanism you use to lay down the memory. Peoples brains are wired up differently, this makes the learning process different for each brain. You can have the exact same situation and set of facts that one person will learn one thing from but another learn a different thing entirely. What gets stored in the brain is directly related to the way it is wired. So this is the second piece of the puzzle. You are you because of the learning mechanism your brain uses. This is further complicated by the fact the way you learn changes over time. As you gain more knowledge about the world, facts or situations presented to you at age 10 will be interpreted and stored differently than when the same facts are presented as age 25. This means your learning mechanism is in a constant flux and you as a person are as well. The 'you' today is not the same as the 'you' yesterday or tomorrow. So not only are you unique but "you" only exists moment by moment and changes every time something new is encountered or learned. "Yesterday you" is different from "today you". "Yesterday you", does not exist today.

What of personality?

"Everybody has a different personality and that makes us all different". This was a comment I got from a colleague of mine. I would argue that personality is a direct consequence of the learning process of your brain. So in one way "personality" is built in. But not in the way you would think. You are not born "sneaky", "brave", "extrovert" or "diplomatic". These personality traits all develop because of the way the brain is wired to lay down knowledge.

The Pleasure and Pain Principle.

The mechanism by which memory is laid down I call "PPP". This stands for the "Pleasure, Pain Principle". From birth you are hungry, this causes crying to get fed. Later you learn other ways to get food, you are cold so you put on a jumper. You get stung by a wasp and so learn to avoid them. All these memories are laid down to satisfy a need, gain pleasure and avoid pain. The subtle ways the brain is wired to your pleasure and pain centres dictates your personality. Being the centre of attention causes some people extreme pleasure and others extreme dread. The former leading to an extrovert behaviour the latter introverted behaviour. If pleasure comes from being the centre of attention, you will seek that out again and again. You have learnt what gives you pleasure and thus will repeat it. This becomes a "personality trait".

Emotions.

Some people are governed by their emotions. Have you ever heard that? People have various emotional states and these states directly effect how you behave in any given situation. Emotional states are like a sliding scale, e.g you can be happy or sad or many states in between. Think of it as a score card that measures a number of physical and mental parameters.

The seven emotional states are:

Love-hate
excitement-depression
dominance-terror
Fascination-boredom
compassion-contempt
constructive-destructive
happy-miserable

Some of these states change depending on recent evens. you may win some money which increases you happy state or you may dent your car which sends you into fits of depression. The terror state is obviously a score of current threats, the last state, (happy-miserable) is an overall score of all the emotional stares. Some of these states vary naturally over time on a sin wave. Gradually moving from one state to another. This is what we all call mood swings, indeed some mental illnesses can be explained by the simple over active changes in the emotional states. Bi-polar disorder is when a person is excited one minute and miserable or depressed the next. Using the emotional states above you could describe this condition as a misplaced trigger of the excitement-depression states. This state can vary in time on it's own by small amounts but imagine this natural variation linked to events or the variation over time to be too large. The patient could change moods quickly and then back again for no reason or due to a simple event that you and I would ignore. I do not want to go in to too much detail about emotions but they are the last piece in the puzzle that makes you, you.

At the beginning of this article I asked what makes you, you. The answer is simple.

You are the sum of how and when your memories were stored dictated by how your brain is wired to your pleasure and pain centres and your emotional state.

If you assume that:

PPP = Pleasure Pain Principle.

M = Memories.

ES = emotional state.

then you can define a human personality as;

$YOU = PPP \times M \times ES.$

I hope this article provokes discussion, if you would like to comment please get in touch.

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