

Love and the Brain – Dr. Elena Molchanova

- found some pictures online
 - emotions vs rationality – heart and brain fight
 - heart and brain work together in harmony
 - hear in the brain – love is in the brain
 - knotted/distorted brain – mental disorder?
 - *Donatella Marazziti* – focus is too much on neuroscientific problems and not joy
- *Helen Fisher* – it's a new idea to accept that the brain is associated with love in the first place
 - <http://www.helenfisher.com/books.html>
 - great TED talker
 - special brain systems for love
- love can be like or lead to
 - a drug addiction: craving, tolerance, withdrawal
 - kinda like OCD
 - poor judgement and distorted reality
- even if you walk into a room of people with identical backgrounds, you'll still be in love with probably one of them
- **romantic love is a mental disorder!?**
- love is a motivation like thirst and hunger
- one of the oldest parts of the brain is the *reptilian brain* which is responsible for rewards, hunger etc
- Pavlov's pyramid of needs does not put love in the basic necessities, but in terms of the brain it is a primary need

craving from a biological pov:

- dopamine is responsible for our feeling rewards
- dopamine is released when you are close to getting a reward
- majority of dopamine release is actually higher when you miss your loved ones, not when you have them
- VTA/Hippocampus area is where the problems come from
- *Nucleus accumbens* releases dopamine when someone takes cocaine for example, also triggered by medication
- both *Nucleus accumbens* and *Hippocampus* both fire when someone experiences romantic love or when they are addicted to certain drugs
- *Helen Fisher* called for people to subject themselves to scans who were rejected or broke up with loved ones – the brain scans turned out to be similar to those of addicted people (or withdrawal)
- in those situations people show symptoms of withdrawal – poor judgement etc
- schizophrenia is caused by exuberant release of dopamine into the *Frontal cortex*, similar to romantic love
- love and craving is so powerful that it is hardly surprising that crazy behavior follows it
- brain scan pictures show activity associated with love in the most ancient part of our brain
- *Anterior cingulate* is also involved in this – this part is responsible for phantom pain as well
- hallucination production is also connected to being in love and rejection
- rising dopamine levels cause serotonin levels to decrease, serotonin is responsible for mood, appetite etc (inversely proportional)
- we have SSRIs (selective serotonin reuptake inhibitors) as depression treatments, now some of them also have dopamine reuptake inhibitors
- *could these be effective for treating unhappy love?*
- *a pill that could "protect" a person from falling in love?*
- activity increases in the romantic core of the brain → amygdala deactivates (responsible for fight or flight reactions) → standards for judging other blur → feeling less stress and fear → unity between the people in love but also risky behavior
- *Globus Pallidus* is responsible for attachment – kinda long term love
- Fisher also MRIs people that were in really long-term relationships and still found dopamine and the Globus pallidus was also active
- other chemicals involved in love: *oxytocin*, *vasopressin*
- those are released during or after orgasm → there is no casual sex!?

- what is needed to stay together for a long time?
- mirror neurons in the frontal lobe → understand the other person
- controlling one's emotions → can lead to problems otherwise
- positive illusions (focusing on what one likes in the other person and to overlook the ones that you don't like)
- majority of long term couples Fisher studied did not get married
- whether love is very defined and biological or transcends that stuff is not totally sure, there are some unresolved mysteries
- seasonal behaviors do play a role in love as they do in depression – the only evidence based factor is sunlight
- differences between love for a partner vs love for friends is in the Hippocampus – emotional memories – parents are slightly different and they are influences on neuron growth
- love at first sight can biologically exist
- *Anatomy of Love* and other books by Helen Fisher

Love as a Social Construct: International Marriages in Kyrgyzstan – Dr. Ruslan Rakhimov

- lots of debates on international marriages in Kyrgyzstan
- one guy was beaten up because he was South Asian with a Kyrgyz wife
- not just Westerners meeting Central Asians – also kind of a clash of cultures
- guesses of why people talk about this
 - it can be frustrating because there are cultural differences and different expectations
 - some people would want to marry the same ethnic group because they want to keep the culture alive
 - there are differences in culture that can lead to a lot of conflicts if people don't understand each other
 - the stigma of mail-order brides or just expectations of what a Westerner can provide: modernity, wealth, lifestyle, respect, treatment – being with a partner and not a family, here it is often the case that a woman would marry a family or clan
- he helped a Kyrgyz-French couple get married and experienced the exchange
- the old NATO base here was kind of a phenomenon, Kyrgyz women got married to workers and soldiers stationed there – some women were trying to really get those men
- previous experiences with foreigners is influential
- cultural norms are still strong: women have to get married and before a certain point, otherwise you are useless, an *old maid*
- it's a psychological travesty
- otherness is a thing – white Westerners are different and there are a lot of ideas and expectations attached to that
- *Byproduct Hypothesis* people share some characteristics
- *Exchange Hypothesis* people trade characteristics
- e.g. many Kyrgyz ex-Presidents had Russian wives – politics and not love
- **is international marriage a strategy and not love?**
 - from women and men there are certain expectations and strategies involved
- what if a Kyrgyz guy with the same “cognitive” features as a Westerner came into the room? Many people say that they would choose a Kyrgyz guy – **all of this is a construct?**
- so a Kyrgyz guy could just change to be like a Westerner? Aida thinks yes; Mathilde thinks it could not be totally Western, but they would still have some roots – could be a bonus
- some people would expect that some people (make Kyrgyz) would change by studying at AUCA for example because you leave and then you are back in the normal world
- oppression, freedom from traditional norms, they can work if they want to
- also positive stereotypes or romanticized views of Western men
- some people are attached to their culture and thus don't want to be married to a foreigner because they would need to move here and many would not do that
- they don't want to or can't follow them to their country because of immigration restrictions
- some people get married to foreigners because they are too old to get married in Kyrgyzstan and

foreigners don't care as much, or this might be just judged from a local traditional viewpoint

- is there something wrong with Kyrgyz men? do we need to change them?
- Kyrgyz people hold their reputation in high esteem
- Westerners might expect a woman to also work and earn her own money
- some women might not be into that
- people want to be happy in all circumstances, but how that works is different
- of course there are traditional marriages in Kyrgyzstan that follow all the normal rules and are happy, they don't let the stuff interfere with their happiness

Love is a social construct

Questions and Discussion

1. Where are the Westerners coming from?
2. What social background do the women that marry foreigners come from?
 - lots of international projects and tourists
 - urbans do not feel the culture as much
 - might be more from rural areas
3. Kyrgyz families see Russian and Western men as potential spouses – for some time it was acceptable and cool to marry a Russian woman vs Russian men marrying Kyrgyz women — now it is the other way around, foreign men marry local women and foreign women don't really marry local men. Another factor are the sometimes wildly different expectations about marriage and stuff between these two groups. There are different “approaches” to have a “good” genealogy with ancestry stemming from a certain place — mingling with non-Kyrgyz is a big problem because of that — you are ruining the country. If a woman “marries up” this is compensated by money
4. Why did Kyrgyz women marry Westerners?
 - most of these things are just outside explainers
 - rationalized explanations were often found
 - traditionally there is not freedom – it is easy to rationalize such a marriage
 - what were the other **actual** reasons for the marriage
5. What is the Westerners perspective?
 - the mostly agree that the person is the most important thing, but the background and expectation and culture can be a big issue
 - Mathilde thinks it would be super hard to marry a Kyrgyz man from a rural area because of the social standards that are attached to it
 - American girls thinks that while it doesn't matter in and of itself, there is a ton of effort involved
 - Canadian thinks that if he finds a person that fits their expectations of what kind of person they want to be in a relationship with it would be cool, but culture might make this difficult
6. How does all that work with queer communities here? Being queer is a big problem here in Kyrgyzstan. It is even a danger. As far as foreigners go, there are not a lot of them coming and even fewer of them are queer. Many of them probably emigrate to other countries because it is a lot easier. Aida remembers a foreign researcher that found a girlfriend in Talas of all places

Everyone around the globe wants to find someone – that's a constant. There are many hurdles to overcome.

Love in the Stone Age – Dr. Aida Abdykhanova

- love in the stone age, but mostly indirect evidence
- it affects all kinds of different aspects of our life
- imaginations of love are probably formed by cartoons etc
- anatomically modern humans can form long term bonds, which is one of the unique features of humans
- Varieties of views
 - promiscuity (L. Morgan)
 - primitive communism (F. Engels)
 - sex for food (O. Lovejoy)
 - sex contract (H. Fisher)

- empathy and compassion
- ability to form a long-term bond
- KNM-ER 1808 died of vitamin A overdose, probably from eating liver
- *Dmanisi* skull is super old, people at that time were 40 years old at most, the skull has no teeth (natural causes) so scientists concluded that they person must have been ~80 years old
- *How Compassion Made Us Human* is an interesting book to read
- modern human faces were shaped by (among others) the need for social skills
- more than 20 types of different types of emotions – our face allows us to express a wide range of emotions
- how the face shape changed can be clearly seen, this face change went faster than some other types of biological changes
- footprints of Laetoli are more than 3,66 mya, 1 male, 2-3 females, 1-2 children
- they were *Australopithecus africanus*
- the footprints of the child disappear from time to time suggesting that it was carried
- recently analysis discovered new footprints, might actually be two males and two small individuals (probably females) and maybe two children
- AL 333 from Hadar, first family ever found, also *Australopithecus africanus*
- many estimations for the number of individuals, 17, 9 adults, 3 adolescents, 5 children
- a paper predicted polygyny in early apes, *Ardipithecus*, Neanderthals, early modern humans, but not in *Australopithecus*
- they used digit ratios to do that so it's not too certain, but cool
- Happisburgh human footprints, a couple adolescents and stuff, about 12 people, from 2 to 18 years
- Ignology studies footprints and the like
- genetic evidence for patrilineal mating behavior among Neanderthal groups, 12 individuals, around 49,000 years ago, Y-chromosome marker and Mitochondrial DNA analysis (because it is transmitted to all genders)
- seems to be evidence of cannibalism
- Rouffignac cave A1 in France there are a lot of paintings, but they are also covered in soft sediment where people drew stuff with their fingers, probably made by children, one of them was made by a ~5 year old girl
- the paintings are 2m off the ground – adult picked up the child and helped it – kind of like play
- *H. sapiens* appeared 200,000 years ago, they interbred with Neanderthals and thus we all have some of their DNA
- there was also a first generation Neanderthal-Denisovan hybrid found that gives insight into the interbreeding that happened
- the mother originated in Europe and not in the Altai Mountains
- because of successful interbreeding we have the double taxonomies of *Homo sapiens sapiens* and *Homo sapiens neanderthalensis*
- Sima de los Huesos – a hole that was used as a grave, 3m meters of sediment full of bones, 430,000 years ago, 29 individuals have been found, a burial complex
- they also found a one hand-axe (“Excalibur”) that might have been a gift for the dead
- Shanidar Cave (IV) a 30-35 year old man, lots of flowers, places where flowers were concentrated, those are considered remedies, maybe Neanderthals used them as healing items
- the cave has multiple burial places
- Areni Candide cave, 23,500 years ago, a 15 year old boy, he had important artifacts with him, for example ivory, kauri shells, obsidian tools. . .
- ivory was from mammoths which were extinct in Europe at the time, obsidian was from southern France, kauri shells only exist in northern Europe – exchange of goods
- the boy may have been killed by a bear or something
- they found stones (pebbles) used to apply ochre to dead people and then being destroyed the tools
- they could have also thrown them into fire and the thermal shock could have destroyed them
- *Homo* something can form long-term relationship, there were multifamily groups, there was mating between distinct groups, dead received special treatment

Questions

1. How long term were the relationships? Hard to say, but probably relatively long because taking care of children takes time and effort. Parental investment by males caused high fidelity to them in women, in humans male parental investment is a lot higher than in other apes. In the stone age

families were relatively small, parental involvement allows offspring to be more fertile and have more children in their turn

2. the need to express emotions was probably the main drive for the facial change. One of the things that are studied are the number of muscles that are needed to make faces. Also the shape of brows and our less prominent eyebrow ridges make expressions easier
3. Do these kinds of findings exist in Asia or maybe in Kyrgyzstan? There were some skulls found in a cave here and it disappeared after the scientist that had it died. In Tashkent a museum has original teeth that nobody can study, and there are conflicting reports on what that stuff is from. Also some of the climate here makes some stuff less likely to survive (humidity, acidic soil), plus just a general lack of investigation
4. In modern animal groups grown up males are forced to leave while in ancient humans woman were left sometimes and men stayed around. It is super hard to find any evidence for any of this. There is evidence for matriarchy or egalitarianism. Biologically, males tend to be more daring and they take their families along, not like men going out and leaving children and wives behind.