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1 day ago

Why a breakup feels like a punch in the stomach

By Linda Carroll

We’ve all been there. A lover, out of the blue, says it’s over. Suddenly there’s a stabbing sensation in the chest, or a wrenching of the gut. Though there’s been no physical damage, it really hurts.

Scientists now know why we feel as if we’ve been physically wounded when the hurt is emotional. A study published in the Proceedings of the National Academy of Sciences found that the same brain areas spark, whether we’re experiencing physical pain or deep emotional distress.

“It means that the expression, ‘My feelings are hurt,’ may be more than just a metaphor,” says the study’s lead author, Ethan Kross, an assistant professor in the psychology department at the University of Michigan.

Earlier scanning studies had shown that the brain doesn’t see any difference between the negative emotions elicited by physical and emotional pain.

But Kross and his colleagues wondered if they could explain the actual physical pains people feel when they experience rejection.

The researchers rounded up 40 people who had been dumped by a lover within the previous six months – so the pain of rejection was still fresh.

For the first part of the experiment, the 40 were touched with a hot probe while they lay in a brain scanner. The probe wasn’t hot enough to burn, but it did hurt. “It’s akin to holding a really hot cup of coffee without the little guard to protect your hand,” Kross says. “You wouldn’t want to do it forever, but it doesn’t burn you.”

For the next part of the experiment, study volunteers were again scanned, but this time they were asked to concentrate on a photo of their ex-lover and to think about the break-up.

The same brain areas lit up whether people were being touched by the hot probe or they were mentally reliving their rejections. Some of those areas were the ones that are involved in processing
negative emotions, but other areas -- those that help us sense physical pain -- also lit up.

Kross suspects we’ve evolved to feel actual pain at separation because way back when humans were on the savannah they needed to stay connected. Being alone was dangerous -- you’d be more of a target for the wandering saber-toothed tiger.

“One of the most negative things to happen, in terms of survival, is being excluded from the group,” Kross says. “So the feeling of physical pain would be a powerful cue to pay attention to what you’re doing.”

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_jwbales_

Interesting research, but the conclusion is speculation. We don’t know what our evolutionary ancestors "felt" before they were capable of forming conscious values.

#1 - Tue Mar 29, 2011 8:52 AM EDT

_Eric-2189088_

The article never stated that was a definitive conclusion. Given the social/tribal nature of (early) humans, it would make sense. It would be interesting to see if something similar happens in chimpanzee groups as well, that would be very telling in regards to if it is an evolutionary response to segregation from the group, or if it is unique strictly to humans.

#1.1 - Tue Mar 29, 2011 2:33 PM EDT

_Alex-1103412_

Yes, it's speculation. That's why it said the researcher "suspected" those causes. In any case, short of time traveling and interviewing our ancestors, it's always going to be speculation. Evidence-based, logical speculation.

#1.2 - Tue Mar 29, 2011 3:58 PM EDT

_jwbales_

You're an idiot, jwbales. We're not talking about amoeba, here.

#1.3 - Tue Mar 29, 2011 6:00 PM EDT
Margaret-3244755
I really like this article. It makes a lot of sense. Thank you for always doing your best when it comes to good and honest reporting.

#2 - Tue Mar 29, 2011 10:12 AM EDT

THIX
I have a relative who is dying and I was just wondering today why the human body reacts to loss the way it does. This article's a nice intellectual glance at that why.

# 2.1 - Tue Mar 29, 2011 4:51 PM EDT

ttmadison
Much of our body's serotonin (feel good neurotransmitter) can be found in the GI tract where it helps with digestion and motility. So if you're feeling down or depressed about a break-up and your body is running low on serotonin, your guts may get crampy and uncomfortable -- the "gut-wrenching" sick, painful feeling associated with emotional pain

# 2.2 - Wed Mar 30, 2011 5:32 AM EDT

Renelda Moorehead
Terrific article, because I have personally experienced these results as true. It's assuring to know it is researched. It's a fact: REJECTION HURTS LITERALLY AND FIGURATIVELY. ASK ANY SOLDIER OF LOVE!!!

#2.3 - Wed Mar 30, 2011 10:52 AM EDT

Anyonmous
This topic makes a lot of sense

#3 - Tue Mar 29, 2011 10:17 AM EDT

Tbone-2440509
The thought of starting over, on your own, out of the blue, it is a bit like being dropped off in the middle of nowhere with no direction: They are abandoning you like an unwanted dog. It's gotta hurt.

#4 - Tue Mar 29, 2011 11:36 AM EDT

Jekazu
It really does hurt.

#4.1 - Tue Mar 29, 2011 4:04 PM EDT

gilligan is hot
You know it hurts to leave as well. I left my wife after 12 difficult years of marriage (long overdue). Although I didn't just abruptly leave or have an affair, I know it hurt her and our children. Our relationship was broken for a long time and we should have never married. I always considered myself a strong person, but being away from my children and feeling like a failure made me ill. I lost 20 pounds and gobs of hair. It took me about three months to shake it.

#4.2 - Tue Mar 29, 2011 7:04 PM EDT

chefaz-1319563
Yes, the pain can hurt beyond imagination. It can also be like a breath of fresh air, feel like a huge weight has been lifted and chains that have evaporated. All depends on where you sit.

#4.3 - Tue Mar 29, 2011 7:49 PM EDT

SteveDogLover

http://bodyodd.msnbc.msn.com/_news/2011/03/29/6363161-why-a-break...
This explains now why my stomach hurt so bad when my Saber Tooth Tiger broke up with me.

Rebekah-3246684
SteveDogLover, call me prejudiced, but you should have seen it coming. Tigers are man eaters, they'll never change their stripes—oh and Cougars, don't get me started on them devil cats. In all seriousness, I've never left a comment before but your remark caused Pepsi to shoot out my nose, though painful, it felt good to choke on a good laugh. I thank the Heavens above for goofballs like you, especially these days when there is so much sadness and war. You owe me a Pepsi though :o)

Ellen Cohen
Tbone-2440509 - You could not have said that any better!

limeinthecoconut
Tbone-2440509...perfectly worded "like being dropped off in the middle of nowhere with no direction". Exactly how it feels.

gary b s
so true! just been through it and it hurts so bad . sometimes in the mornings it makes me sick to my stomach also!

Jekazu
It gets easier, Gary. I promise.

Crystal-569996
It does get easier, take advantage of your alone time to rediscover yourself as we usually get sucked into our partner's life and lose our own. Sadly, though I have been married twice, I only felt the true "broken heart" when my dog Budly died after 10 years together. We never fought, never said anything hurtful, understood each other, we had total trust, etc.

Crystal-569996, you make an excellent contribution to this dialogue: yes, losing a pet also causes phenomenal emotional pain - far more than the reasoning mind can account for. After losing several aunts and close uncles, our family lost our Irish Setter to stomach cancer ... and oddly, that seemed to push me over the edge. I felt deep melancholy for weeks, for the dog was not only an incredibly marvelous companion to my wife and children and me, it also represented a very precious decade of raising our 8 children - and the death of Bridie meant the passing of an era; thus a terrible sense of nostalgia hit me. I brewed on this for several weeks and couldn't shake it, and began to realize I'd better come to terms with this before I fell into a permanent funk. Then one night it all came out in a poem - the best I'd written in my then 52 years of living. As I wrote, the thoughts came together with an unusual epiphany I never expected: the passage of time makes impossible the possession of anything: person, pet, relationship, situation in life, wealth, power, position. This helped me gain the perspective necessary to get over the "loss" when I realized that I never really possessed anything in this temporal world governed by time. I knew that this is the promise of Heaven, where time ceases to rob you of "the moment" of joy we each experience from time to time, era to era, in our lives. As to why the pet was so important to us, that is another mystery that I will ruminate on. Perhaps our bond is so strong because, of all the members of the animal kingdom, the dog and only a few other species are friendly to us ... I'm religious and wonder if that relationship with dogs was something we had with the entire animal kingdom when Adam and Eve lived in the Garden of Eden. If so, that might account for the powerful nostalgic loss we feel at the loss of this friend to us. Just a speculation, not a conviction ....
**g-girl 777**

Couldn't agree more on the comments about the value of our pets. I have a 12 year old Boston Terrier and he has been with me through it all. He has Cushing's Disease and my heart aches at the thought of life without him.

gary b s: I agree, the hardest time after a break-up is in the morning. I am experiencing this right now and every morning my stomach hurts. We can make it through it though. Time heals.

#7.5 - Wed Mar 30, 2011 7:43 AM EDT

**BRENDA-755413**

G-GIRL 777,

I understand. I have a Boston Terrier puppy. I love him so much that his death would hurt me very much. Even though I can't picture life without my husband, my puppy is now my baby. I lost my daughter 20 years ago and the physical pain from that experience still cramps my stomach every year on her birthday. But, at least I can function now. It get's easier with time.

#7.6 - Wed Mar 30, 2011 9:01 AM EDT

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**Rural Washington State Perspective**

Since workman's compensation demands "objective evidence of injury" before they will compensate an injured worker, this test will give objective evidence of injury by a person who is rejected (fired) from their job. Thus, it will become a workman's compensation injury! LOL!

#8 - Tue Mar 29, 2011 3:22 PM EDT

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**Common Sense-2004266**

The Body Odd - Why a breakup feels like a punch in the stomach

http://bodyodd.msnbc.msn.com/_news/2011/03/29/6363161-why-a-break...
If any tax dollars were used to conduct this research my stomach will begin to turn.

University of Chicago Student

Although I understand what you are getting at, I strongly disagree. The notion that we can predict which research will be beneficial has been shown again and again to be a fabrication. In my opinion, research producing tangible benefits more often comes from funding seemingly "pure" or "academic" studies which turns up an usual or surprising result than it does from research geared to the public benefit (such as nearly every promising new drug in the past decade). You may not feel immediately gratified by this research, but try to keep things in perspective. The whole field of genetics today would not exist if it were not for research conducted on fruit flies.

Ashin

Common Sense-2004266 - the topic of a given piece of research, and its valued uses later are not always easily correlated - people used to make "fun" of research like how mussels breed, or effect of sex phermones on moths - but later this knowledge may well be critical to mitigating zebra mussel invasion of our freshwater lakes, or helps create defenses against plant damaging moths. People continue to make fun of scientists who think about quantum paradoxes, fool around with bits of crystals, or hypothesize about how "space is bent by spinning masses" - but remember that the transistor is essentially a quantum device made of bits of semiconductor crystal, and that modern GPS systems need to compensate for the relativistic effects of our earths rotation in order to work correctly. Oh - and that same GPS system is used to discipline stratum-1 clocks that make CDMA technology work, so you can make your cell phone calls. Scientific study takes people wherever it goes - and often that understanding or the side-effects of doing the science makes it possible for others to later invent, cure, fix, or otherwise create value for all of us. Apollo cost a lot to do, but the side-effects on material science, metallurgy (learning how to work titanium etc.), chemistry, computation, complex engineering etc. created industries that payback more than the US govt ever put in...

Weezy-3246267

Unless (of course) there is another party involved (another woman)...then you have the feelings of inadequacy, jealousy, and hatred added on top of all that!

Baddog40

So rejection hurts because we're afraid of being eaten by tigers??

Penny -3103330

Human nature is amazing. If we have been separated by the pack, do we die or survive? Character building lets us join another pack or start a new one. Rarely do we wither and die. Survival of the fittest.

Sandungo

...but how can we start a new pack when the one you want to start it with just left you?

TheGrammarPolice

Yes.

Bill S. Preston, Esq.

When my ex broke up with me to go out with a mutual friend who was 22 years older than her and already had a couple of kids, I lost
almost 30 pounds. I wish she'd break up with me again!

#14 - Tue Mar 29, 2011 4:43 PM EDT

**disgUSTed-2940129**

I don't like the emotional rejection thing, but, how hot is that probe and where is it applied?

#14.1 - Tue Mar 29, 2011 5:16 PM EDT

**gilligan is hot**

lol. My divorce hurt me a lot, but I moved on and am 10 times stronger than I ever was before. I don't ever want to go through that again.

#14.2 - Tue Mar 29, 2011 7:07 PM EDT

**Midnight Toker 4+20**

Been there! You feel numb and as if you don't know what to do or where to go. Especially if its a marriage or LTR with little issue you just get left for supposed greener grass out of the blue. When mine (she) left that was the circumstance. Asked for her to marry me after being together for 7 years and she said yes. Then 2 months later she left me for another man and I later found out the dude was a short, fat and quite unattractive comic book guy which made it all the more puzzling. Never looked at women the same since really.

#15 - Tue Mar 29, 2011 5:12 PM EDT

**Some comic books sell for as much as 10 thousand dollars apiece...Might have something to do with it...Any way Midnight Toker 4+20 if that is your real name...I wish you luck, you had a tough break, I hope you find someone who is not out for money.**

#16 - Tue Mar 29, 2011 5:57 PM EDT

**Rude is Not right.**

#16.3 - Tue Mar 29, 2011 7:02 PM EDT

**DevAvo**

Yep I felt that exact pain when I got separated. Along with no appetite, no energy and a strong urge to end it all. Thankfully things got better for me.
Warren Chu
Smilodons, or the saber-toothed CAT (not tiger), roamed the North American continent until 10,000 years ago. They did not inhabit the savannahs of Africa.

scottknous
I am now just going through this scenario. 5 weeks and it has been one of the worse things that has happened to me in my life. After a 10 year LTR and in my state we are common law marriage. Gone through good times and tough times, was told, "I am unhappy" I love you and will miss you, but don't want to be with you. don't figure and hurts like hell. Have lost 12 lbs, and feel pretty lost. I expect to get over it, but is still a shock.

BrokenWing-3246611
You mean if one eats a tiger, their spouse will breakup with you?

Randle-3246622
Columbia University = MISPWOSO

lostnthewoods
It's funny, but after experiencing this sort of physical pain from a bad breakup a few years ago, and then going through a family member's loss a year ago, I am certain that grieving the death of a loved one and being heart-broken by a lover produce the EXACT SAME PAIN! It's that gut-wrenching, stabbing feeling described here. They ought to expand the study to include subjects who are grieving. I believe they both feel physically the same. Either way, you lose somebody that you're close to and it's devastating!

wintersbutterfly
Brilliant story. I suffer from extreme depression and anyone with depression understands in detail how real the emotional pain is. I really enjoyed the insight in this article.

BrokenWing-3246611
Honestly, there's still a bit of pain after 32 years. Just a bit.

Sabrina Michele
Just because you can't see something doesn't mean it's not real. A broken leg can heal fully in a few months, but some people will never get over a broken heart. In my opinion, pain from any relationship serves as a reminder to treat those we love well so we can AVOID that 'slammed in the chest' feeling...which is probably why it hurts more if you're taken by surprise by an abrupt end in comparison to a relationship that ends after a long tenure of misery on both sides :)

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