



Retracing the evolution of Reddit through post data

Posted on [03/12/2013](#) by [Randy Olson](#) — [7 Comments](#) ↓

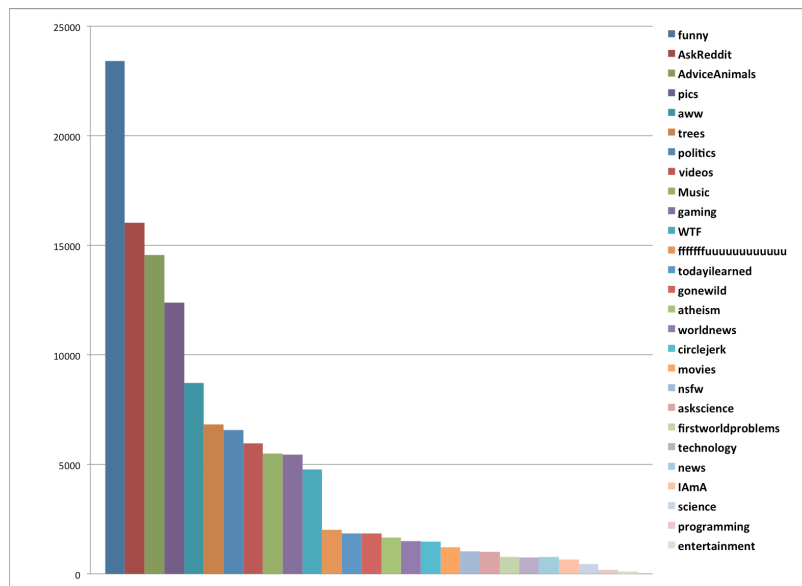
Have you ever wondered how the [Reddit](#) community has changed since it started in 2005? I've only been active on Reddit since late 2011, so I've always been curious how Reddit looked before I came along. In this post, I try to retrace the evolution of the Reddit community from its inception in 2005 up to November 2012 by analyzing the posts that users submitted to Reddit over time.

The current state of Reddit

What does the Reddit community look like right now? Where do people submit their posts to? The graph below answers those questions at least in part by showing the number of posts that were submitted to each of the most active subreddits in the first week of November 2012.

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If you're familiar with Reddit, the top 5 subreddits are to be expected: /r/funny, /r/AskReddit, /r/AdviceAnimals, /r/pics, and /r/aww. Four of them are focused on sharing pictures, and /r/AskReddit is used to ask questions of and share stories with other Redditors. Together, these five subreddits account for the majority of the content on the Reddit default front page nowadays.

The next 6 subreddits are a little more interesting. `/r/trees` (a subreddit dedicated to discussing marijuana), `/r/politics`, `/r/Music`, and `/r/gaming` capture the main interests of most Redditors, who are typically **20-something American male college students**. Finally, `/r/videos` and `/r/WTF` are two more media-based subreddits.

From this brief survey, it becomes abundantly clear that the primary content of Reddit nowadays is pictures and videos. This trend makes sense, too: pictures are easy content to produce and take only a few seconds to look at, enjoy, and upvote. For better or for worse, Reddit's karma system favors pictures and short videos, and I expect there to be an ever-increasing trend of more pictures and fewer text-based posts.

I should note here that there are [thousands of active Reddit communities](#) nowadays, and I have made some broad

Meta

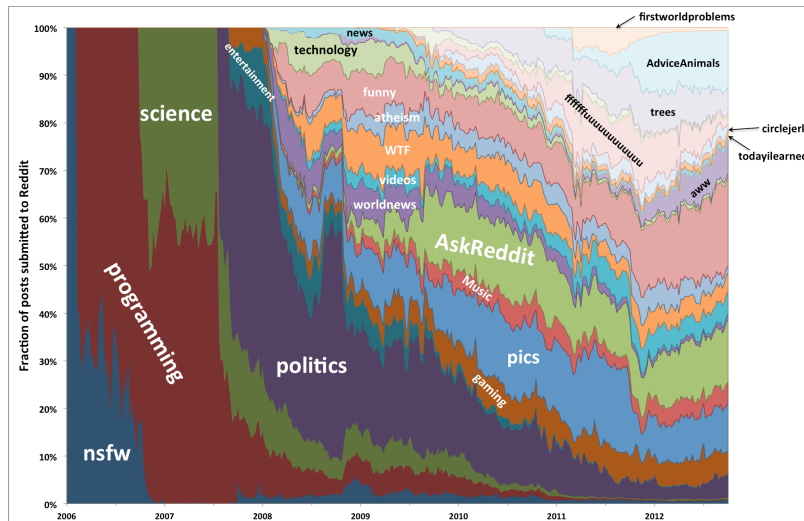
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- [Comments RSS](#)
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generalizations here based off of the most popular subreddits. Put away the torches and pitch forks, please!

How Reddit has changed over time

Now that we know what the Reddit community looks like today, how did it look in the past? The graph below shows how 24 of the most active subreddits have changed over time. I ordered the subreddits by the time that they first appeared on Reddit. I recommend zooming in so you can see it better.

(I should note that I purposely excluded /r/reddit.com from this graph because it dominates the entire graph until about 2008, then screws things up again when it got closed down in late 2011.)



Subreddit growth over time measured by fraction of posts submitted to each subreddit

The biggest thing that you may notice is that there were very few subreddits from 2006-2008. In fact, there was only one subreddit before 2006 (/r/reddit.com). The majority of the content in 2006-2008 was focused on more techie-friendly subjects: programming, science, politics, entertainment, and gaming. Major subreddits dedicated to solely picture and video content started becoming popular in mid-2008, and even then their posts only comprised less than 1/4 of Reddit's content. It

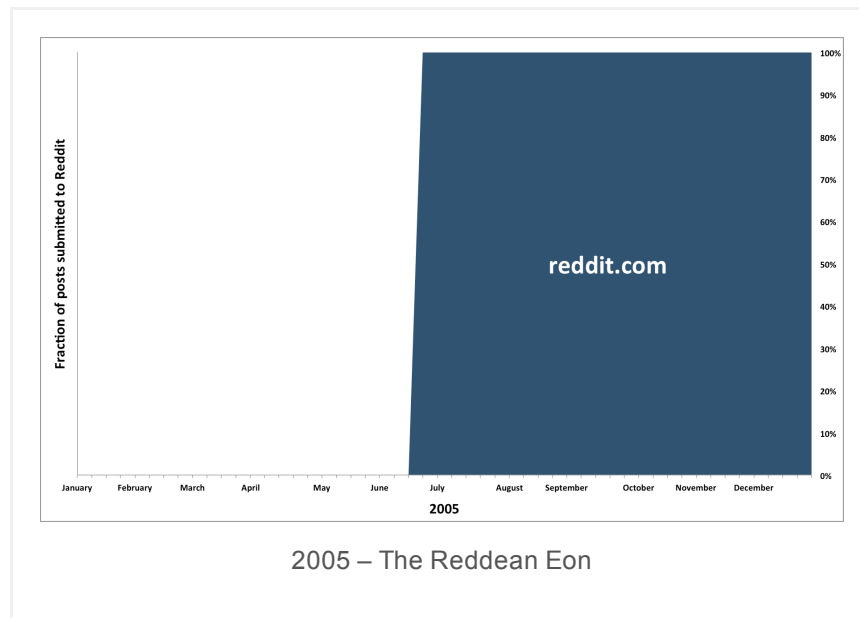
wasn't until 2011 did the picture-related subreddits really start taking over, and Reddit never looked back after that.

This graph covers so many changes in the Reddit community that it can't explain what happened by itself. In the following sections, I will take a closer look at how the Reddit community evolved on a year-by-year basis.

2005 – The Reddean Eon

Reddit didn't show any signs of life until Thursday, June 23, 2005, when Reddit co-founder [kn0thing](#) submitted the [first post on record to Reddit](#) discussing The Downing Street Memo. How appropriate that the first public post to reddit was politically-oriented!

Update (03/26/2013): reddit team member [jedberg](#) pointed out that there was one post by kn0thing just before the one [ChickenLittle](#) posted. Where'd that post come from!?



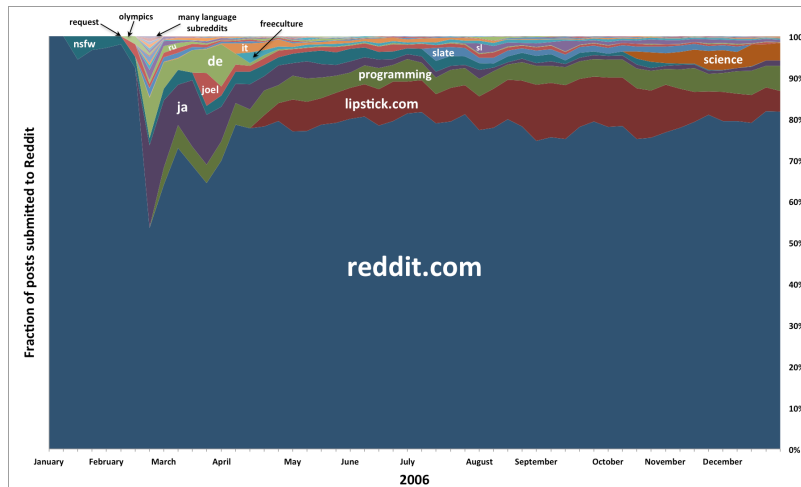
There wasn't really anything interesting happening during this time period, but I had to include it for posterity. At this point, Reddit only had a single subreddit: [/r/reddit.com](#). This period marks the early development of Reddit by Steve Huffman and Alexis Ohanian, when they added core features like the "hot" page ranking (which is now default for the front page) and persistent upvotes.

2006 – The Archreddean Eon

2006 is finally when things get interesting! Presumably after one too many complaints about getting caught looking at pictures of breasts “on accident” on Reddit, they added the very first subreddit specifically for NSFW content: /r/NSFW. As you can see in the graph, people immediately started using it, showing how eager Redditors are to share NSFW content. It’s amusing to read [their curt blog post about making the new subreddit](#), where they state:

We’ll be playing around with more of these sub-sections to reddit in the future. Should be fun.

I guess they didn’t know that they had stumbled into an idea that would later make Reddit what it is today.



2006 – The Archreddean Eon

You’ll notice in February, the number of subreddits suddenly spikes. Sure enough, following the Reddit blog, they started adding all kinds of subreddits during February: [Olympics](#), [feature request](#), [and subreddit request subreddits](#); [language-specific subreddits](#); and [yet more language-specific subreddits](#).

A few more topical subreddits showed up later as well, which are vaguely mentioned in the blogs. For the most part, though, Reddit's content came from /r/reddit.com, which acted as a catch-all for everything else.

Notable subreddits born this year

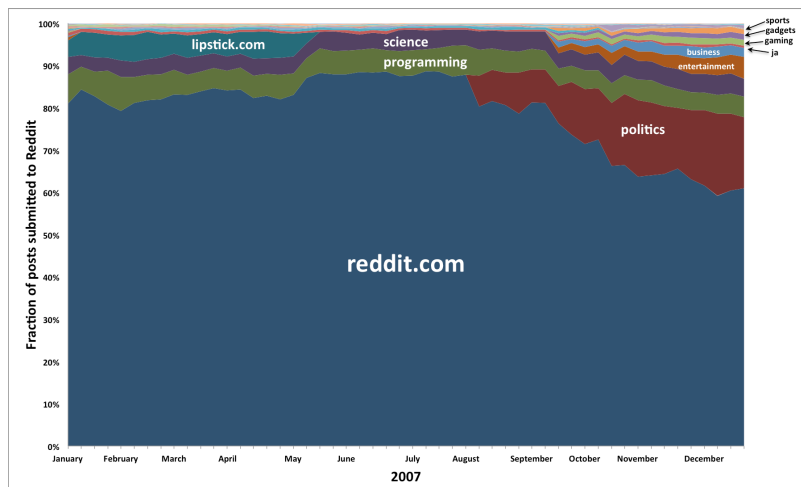
/r/programming, /r/science

Notable subreddits died this year

Most of the language subreddits died before they even had a chance. Survival of the fittest!

2007 – The Protereddoic Eon

2007 marks the extinction of all but two of the remaining language-specific subreddits that hadn't already died. The main techie-friendly subreddits (/r/programming and /r/science) thrived, while /r/lipstick.com (a celebrity gossip subreddit) seems to have been supplanted by a more general /r/entertainment subreddit.



2007 – The Protereddoic Eon

The biggest change in subreddits that we can see here is the explosive emergence of /r/politics. It seems like Redditors in 2007 were dying to have a politically oriented subreddit, seeing how the subreddit grew to take up 20% of the total submissions to Reddit in a matter of a few months. Sure

enough, looking at the blogs again, we can confirm just that: [/r/politics was an addition by popular demand](#). Redditors of 2007 were so politically-oriented that they had /r/obama created over a year before the election!

Notable subreddits born this year

/r/politics, /r/entertainment, /r/business, /r/gaming, /r/gadgets, /r/sports

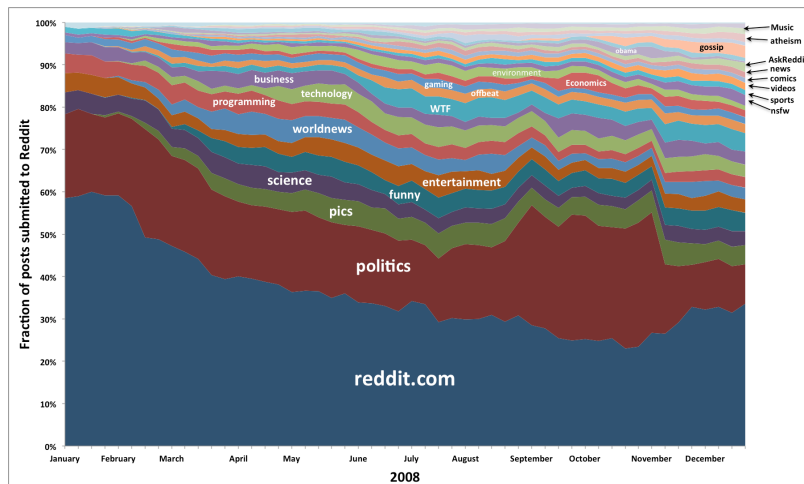
Notable subreddits died this year

The rest of the language subreddits except for the Japanese and Italian subreddits. They really liked Reddit!

The rest of the subreddits dedicated to outside blogs: /r/lipstick.com, /r/joel.

2008 – Reddit's Cambrian Explosion

If you've been following the graphs, January of each year always seems to bring a whirlwind of change to Reddit. 2008 was no exception.



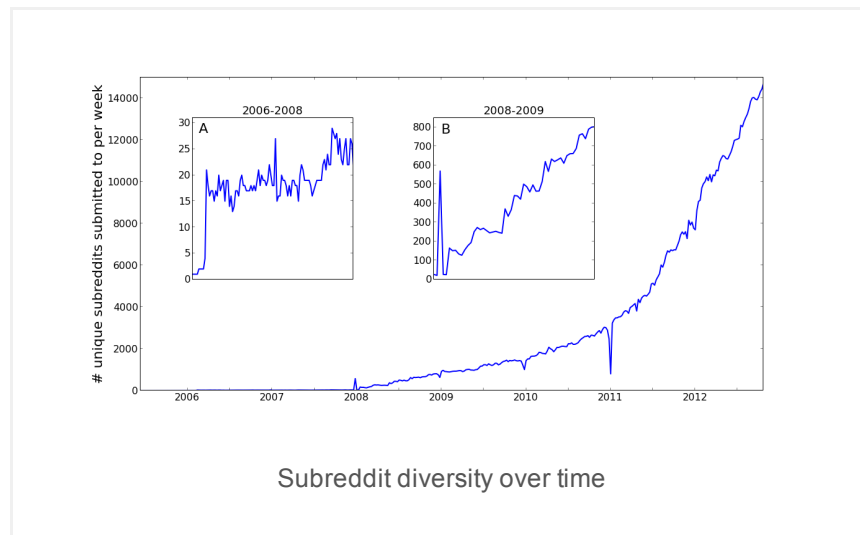
2008 – Reddit's Cambrian Explosion

This year, we see an explosion in the diversity of subreddits. What the heck happened? As it turns out, [Reddit added a feature](#) for users to create their own subreddit. Almost

immediately, people created /r/pics, /r/funny, /r/WTF, and many other subreddits dedicated to pictures. In just the matter of a few months, 1/3 of Reddit's content was sorted from /r/reddit.com into subreddits dedicated to specific topics. Thanks to the new “create your own subreddit” feature, Redditors were able to sort the majority of their own content out into the proper forums. The Reddit system works! Cool!

It's also pretty cool to see the spike in posts to /r/politics and /r/obama near election time in November, showing just how active Reddit was in the Presidential election. It seems even from the early years, Reddit was a politically-oriented web site.

I was interested in just how many subreddits were created in this time period, so I graphed “subreddit diversity” over time.



Panel A shows the very gradual increase in subreddits from 2006-2008 as Reddit's managers slowly added subreddits by request. Panel B shows the huge blip in the number of subreddits during the “create your own subreddit” beta period, then the crash when they ended the beta period, then finally the never-ending diversification of subreddits as Redditors were officially allowed to create their own subreddit. As of November 2012, there were as many as 14,000 different subreddits active at once, and I'm sure it's kept growing since then!

Notable subreddits born this year

/r/AskReddit was born on January 25th, 2008 when some

Redditors noticed that “Ask Reddit” was becoming a popular posting trend. Sadly, [the only questions asked that day](#) were questions about how the subreddit would work.

[/r/gonewild](#) was born on December 19th, 2008 as an [awkward conversation between a bunch of guys talking about showing each other their penises](#). Oh, internets!

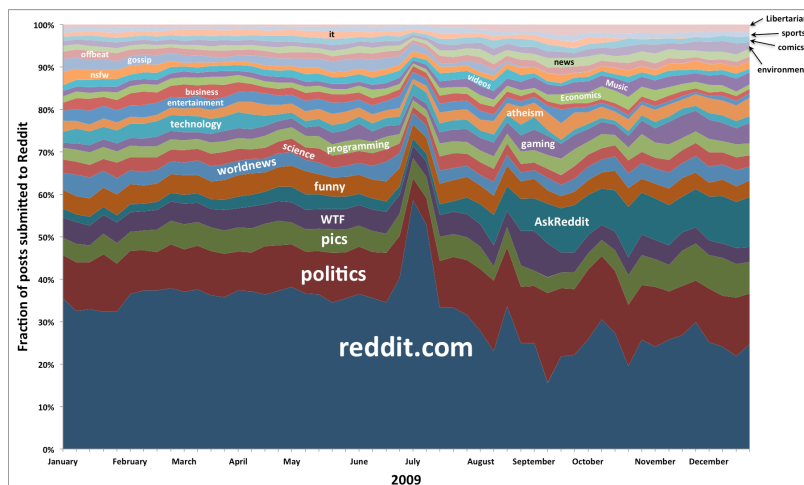
[/r/pics](#), [/r/funny](#), [/r/environment](#), [/r/worldnews](#), [/r/Libertarian](#), [/r/technology](#), [/r/WTF](#), [/r/offbeat](#), [/r/space](#), [/r/reportthespammers](#), [/r/Atheism](#), [/r/Christianity](#), and many many more. Sorry if I didn’t list your favorite subreddit that was born during this time — there’s so many!

Notable subreddits died this year

Surprisingly, none! Though I’m sure many subreddits tried to start up and died during this period.

2009 – The Great /r/reddit.com Spike

By the end of 2008, over 2/3 of Reddit’s content had been sorted into specific subreddits, which is quite impressive considering 80% of Reddit’s content was being posted to the catch-all [/r/reddit.com](#) just a year and half earlier. 2009 seemed to be much of the same of 2008, with yet more content filtering into subject-specific subreddits and [/r/reddit.com](#) becoming increasingly obsolete.



2009 – The Great /r/reddit.com Spike

Then in June, something weird happened: a huge spike in /r/reddit.com posts! I've looked all over the blog and scoured the Internet and can't find a reasonable explanation for this spike. Do any Redditors from 2009 know why?

What's not shown in this graph but shows up in the data: even up through 2009, there were very few pornography-centric subreddits. Either /r/NSFW and /r/gonewild handled most of Reddit's needs at the time, or Reddit just wasn't the place for pornography in 2009.

Notable subreddits born this year

/r/IAmA was born on May 28, 2009 with a series of IAmA posts by [people from all walks of life](#).

/r/todayilearned was born on January 2nd, 2009 with [a post about how carrots were originally purple](#), which I am fairly positive has been reposted at least once.

/r/trees was born on October 15th, 2009 with [a series of fantastically on-topic posts](#).

/r/ffffffuuuuuuuuuuuuuu, /r/circlejerk, /r/DoesAnybodyElse, /r/listentothis, /r/tf2, /r/TwoXChromosomes, /r/SuicideWatch

Notable subreddits died this year

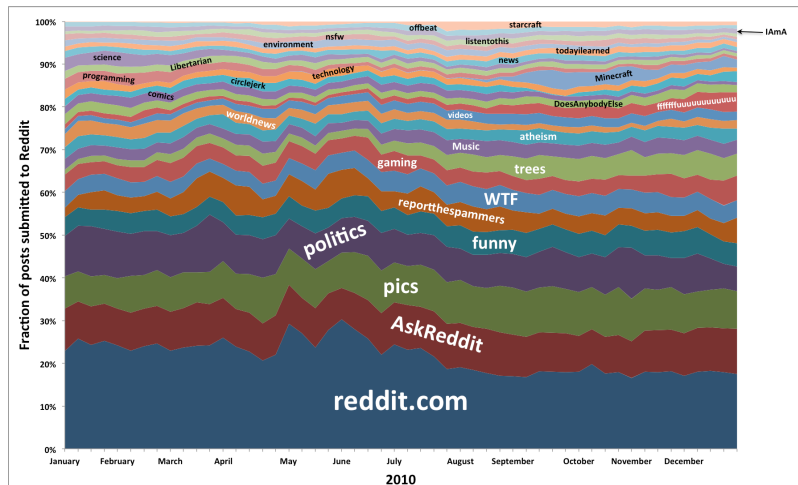
/r/gossip, /r/pornography (a short-lived effort to share pornography on Reddit)

The final language-specific subreddits originally created in 2006, /r/it (Italy) and /r/ja (Japan), died off in favor of country-specific subreddits created by the users.

2010 – The Year Gamers and Porn Invaded

If it wasn't obvious in 2009, you can't miss the fact that this is the time period Reddit became less techie-focused and more like it is today. /r/politics was supplanted by /r/AskReddit and

the picture-related subreddits, while all the stoners crowded to /r/trees to discuss “fucking trees, guys.” Interestingly, there appears to be a decline in all of the techie-friendly subreddits at the end of 2010, when the Digg exodus was in full force. /r/gonewild also seems to have started growing in popularity during the Digg exodus (not shown here — it was still very small), so maybe Redditors have something to thank Digg for!



Meanwhile, /r/gaming and gaming-related subreddits continued to grow in popularity throughout 2010. What’s really neat is this is the first year you can see subreddits exploding in size over a short period of time because of the release of a game: /r/starcraft for StarCraft II in June 2010 (hype for the release of the game the next month) and /r/Minecraft in July 2010 (when it started getting international media attention).

Apparently spammers became a huge problem on Reddit in 2010, since reports on /r/reportthespammers comprised at least 10% of Reddit’s submissions on a weekly basis. *Thanks, Obama.*

Notable subreddits born this year

/r/ColbertRally had a short-lived spike in the months immediately before and after the rally happened. It’s really neat how you can detect the big political events that Reddit participates in by looking at these spikes!

/r/leagueoflegends, /r/wow, /r/buildapc, and many more gaming-related subreddits.

Notable subreddits died this year

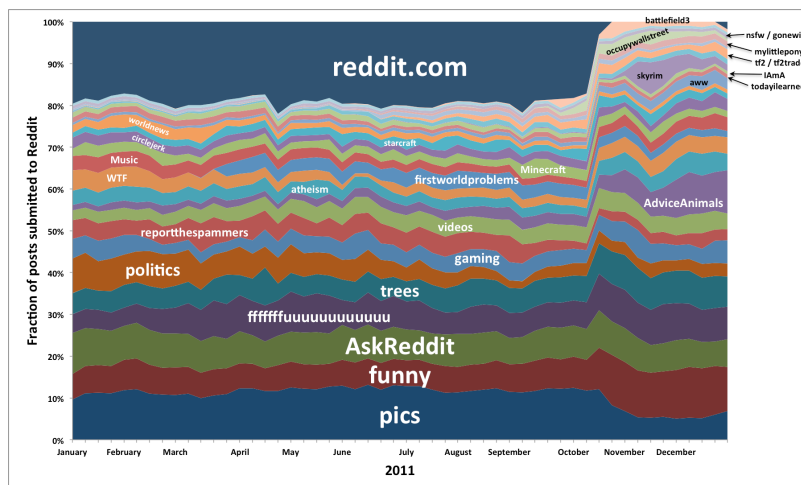
/r/RapidshareList died as quickly as it came to life, peaking out at over 5,000 submissions in the week before it died (as many as the top subreddits at the time). Did someone get busted?

/r/Marijuana went down in flames as /r/trees took over.

2011 – The Year /r/reddit.com Died

Ah, 2011. [The year Reddit lost an old friend](#). After seeing /r/reddit.com still host 20% of Reddit's content after two years of trying to get rid of it, I'm sure the Reddit administrators got sick of waiting for /r/reddit.com to be replaced by topic-specific subreddits and finally decided to pull the plug. While it was sad to see /r/reddit.com go — it was a great catch-all subreddit, after all — we have been afforded a rare opportunity to see how removing a massive subreddit can affect an online community. Now, let's take a look...

(I should note that I moved /r/reddit.com to the top of the graph here so its removal at the end doesn't cause a wave in all the other subreddit's areas.)



2011 – The Year the /r/reddit.com Died

For the most part, Reddit's transition to picture-focused content continued just as it did in 2010. Memes starting sprouting up all over Reddit: rage comics (/r/f7u12), First World Problems, Advice Animals... many of our favorite memes first appeared on Reddit in 2011. Fewer people talked about politics, world news, etc. and instead preferred the easy laughs and upvotes that memes offered. Using [stattit.com's subreddit time machine](#), we can see how dramatically the front page shifted during this time period:

[front page from January 1st, 2010](#) (only 27/100 of the top posts were images, and only a few of those are memes)

[front page from January 1st, 2011](#) (60/100 of the top posts are images, and many more are memes)

If you want to see something really interesting, check the [front page on January 1st, 2009](#) (11/100 top posts are images, no memes), or even the [front page on January 1st, 2008](#) (1/100 top posts are images, no memes).

In late October, /r/reddit.com was shut down for good and Reddit's community shifted dramatically because of it. It looks like /r/pics experienced a temporary bloat in submissions (likely pictures coming from /r/reddit.com), then suddenly the number of submissions to /r/pics shrunk. Shortly thereafter, the images from /r/pics moved to the other image subreddits (/r/funny, /r/f7u12, /r/AdviceAnimals, /r/WTf, and /r/aww) for some reason. Apparently, the /r/pics mods decided they didn't like the sudden influx of meme pictures to their subreddit, and consequently cracked down on submissions and pushed them off to more specialized subreddits. /r/funny and /r/AdviceAnimals seemed happy to take the majority of those submissions, and quickly became the most active subreddits.

By the way, it's fascinating that you can still see spikes in gaming subreddits when games are released. This year, the big spikes happened in /r/battlefield3 for its October release, and /r/skyrim for its November release. I should also note here that Minecraft, Starcraft, and TF2 have done a great job of maintaining active communities around their respective video games!

Notable subreddits born this year

/r/occupywallstreet sprang to life in late 2011, showing that Reddit was still politically active enough to rally around a common cause (despite the waning popularity of /r/politics).

Bronies everywhere came together at /r/mylittlepony to rejoice in all that is wonderful about My Little Pony. I've never understood the appeal myself, but it's undeniable that /r/mylittlepony was (and still is) an active part of the Reddit community!

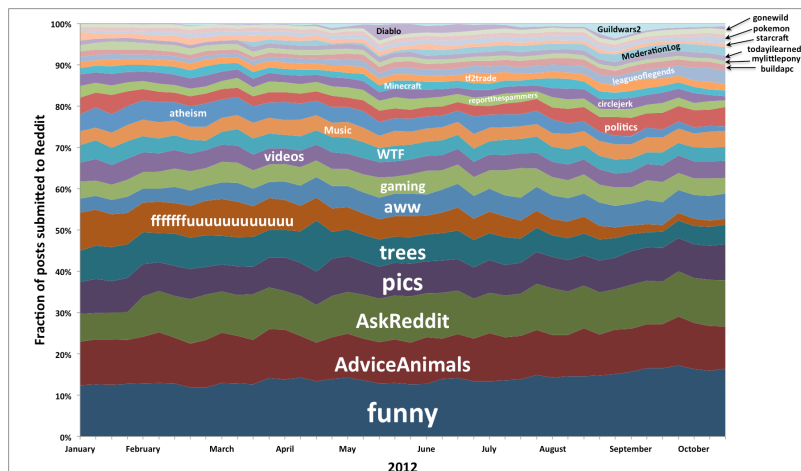
Notable subreddits died this year

/r/reddit.com went down in a Rasputin-like fashion, coming back to life near the end of 2011 to have yet more posts submitted to it, then finally clunked over the head and put to rest. RIP.

2012 – The Year Picture Subreddits Took Over

Finally, here we are in 2012.

Removing /r/reddit.com seemed to make pictures even more popular on Reddit. Just check the [front page on January 1, 2012](#) (77/100 top posts are images). At this rate, it looks like Reddit will be an image board within a few years.



2012 – The Year Picture Subreddits Took Over

Apparently Redditors got tired of the rage comics in 2012, as shown by the declining activity in /r/f7u12. The Pokemon craze hit Reddit big time in 2012, with /r/pokemon finally making it into the top 25 active subreddits. The most interesting thing to me, though, is how /r/trees remained remarkably active despite the fact that it's not a default subreddit. Reddit has some seriously dedicated tokers!

/r/politics experienced a small resurgence of activity near November for the 2012 Presidential elections, but it was nothing compared to last time. If anything, this fact shows how much Reddit has changed in the past four years: from politically active tech nerds to gamers, stoners, and picture/meme lovers.

Finally, we saw two more subreddit spikes due to game releases this year: /r/Diablo for Diablo 3's mid-May release, and /r/guildwars2 for its late August release.

Notable subreddits born this year

/r/ModerationLog was created to log all of the submissions that were removed by moderators of Reddit's various subreddits. There seems to be quite a lot of moderation going on nowadays!

/r/POLITIC's post bot has excelled at bringing content into this subreddit, made obvious by the sudden explosion of /r/POLITIC's posts in late 2012 (not shown here). It's pretty rare for a new subreddit to make a dent in Reddit's overall submission traffic nowadays, so hats off to the /r/POLITIC bot!

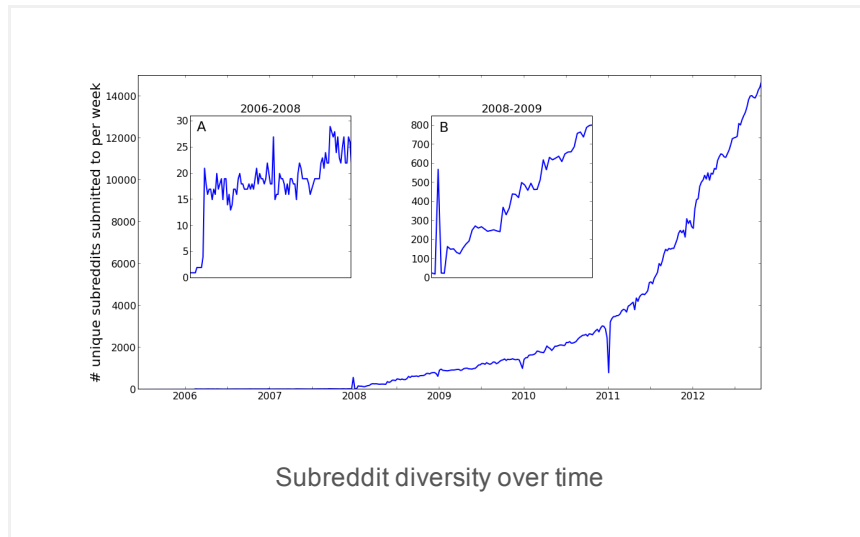
Notable subreddits died this year

While a few subreddits seem to have fallen from the charts this year (/r/firstworldproblems, /r/IAmA, /r/worldnews), they're still alive and well. Only time will tell if text posts and article links will be completely replaced by images and videos.

One last word on the future of Reddit

I have one last comment on the future of Reddit. I've seen a lot

of people getting disparaged by how Reddit is slowly becoming a sophisticated image board, and I'd like to address that concern here. Let's recall the subreddit diversity graph I showed earlier:



What's readily apparent from this graph is that even though the picture subreddits are dominating Reddit in terms of pure number of submissions, there are new subreddits dedicated to every topic you can imagine being created every day. Yet the biggest hurdle Redditors face is finding these new subreddits that are interesting to them. Oftentimes a new subreddit springs into popularity because of a chance mention in the comments of a picture submission, but that's not really an efficient way of guiding Redditors to the subreddits that they find interesting. As such, I think Reddit needs a new tool — or set of tools — to help new Redditors find smaller subreddits that interest them.

What should that new tool be?



About [Randy Olson](#)

Randy is a PhD student in Michigan State University's Computer Science program.

Along with his lab mates in Dr. Chris Adami's lab, he studies biologically-inspired artificial brains and algorithms with the goal of evolving intelligent behaviors inside the computer.