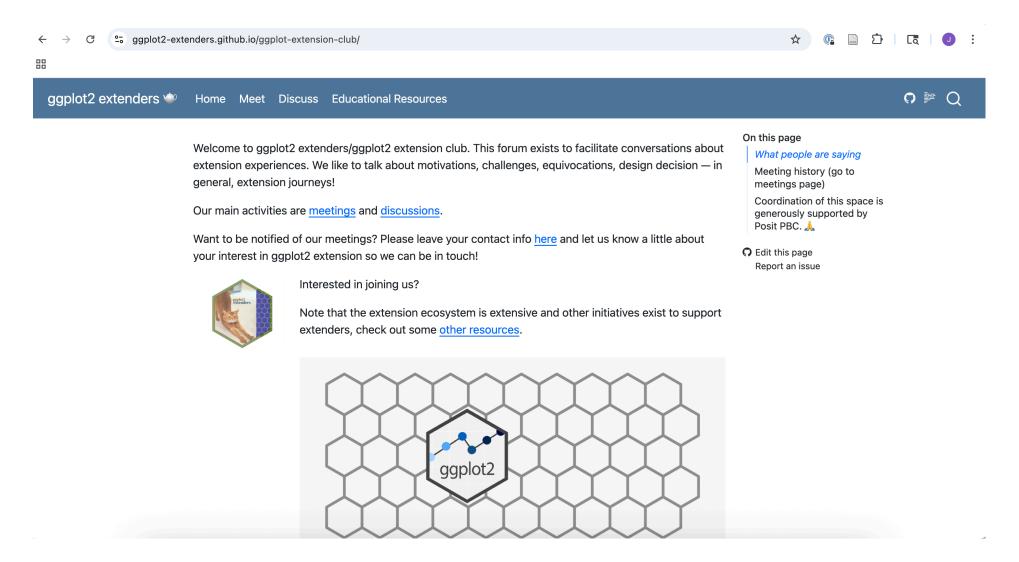
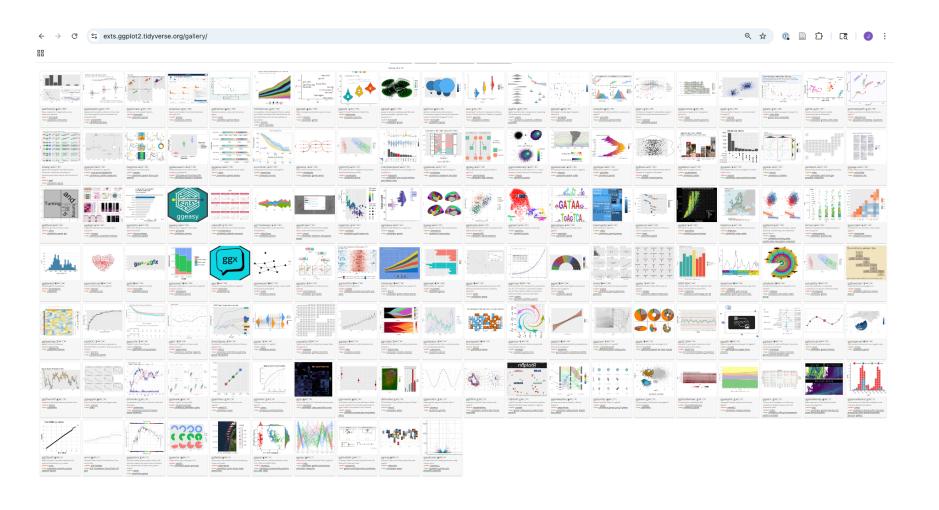
# An introduction to the ggplot2 extension ecosystem

### ggplot2 extenders club



ggplot2 extension gallery packages? (151 packages)



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   https://exts.ggplot2.tidyverse.org/
- Packages on CRAN that start with "gg" or "GG"? (273 packages)

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   https://exts.ggplot2.tidyverse.org/
- Packages on CRAN that start with "gg" or "GG"? (273 packages)
- Packages on CRAN that starts with "gg" or "GG" and mentions ggplot2 in the title, description, depends, imports, or suggests fields? (254 packages)

• Depends on ggplot2? (411 packages)

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- Suggests ggplot2? (1625 packages)
- The above account for 25.79% of all packages currently on CRAN!

### Working definition ==> 309 packages

on CRAN, start with "gg" or "GG" extension gallery 128 126 **CRAN** archive only Don't mention (not on CRAN) ggplot2

#### First 10 extensions to appear on CRAN

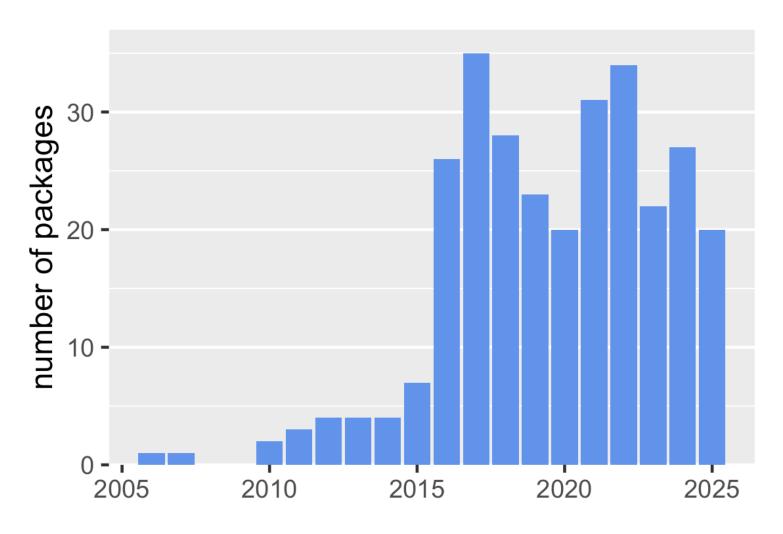
package	first_release	on_cran
ggplot	2006-04-06	FALSE
ggplot2	2007-06-01	TRUE
GGally	2010-02-01	TRUE
directlabels	2010-11-26	TRUE
ggcolpairs	2011-02-16	FALSE
GGEBiplotGUI	2011-08-29	FALSE
ggmap	2011-11-30	TRUE
ggparallel	2012-08-18	TRUE
ggsubplot	2012-09-04	FALSE
ggmcmc	2012-09-05	TRUE

#### Last 10 extensions to appear on CRAN

package	first_release	on_cran
ggtreebar	2025-05-16	TRUE
ggpedigree	2025-05-23	TRUE
ggtime	2025-06-10	TRUE
ggmRSCU	2025-06-24	TRUE
gggda	2025-07-09	TRUE
ggtranslate	2025-07-10	TRUE
ggchord	2025-07-16	TRUE
ggcorrheatmap	2025-07-28	TRUE
ggplayfair	2025-07-28	TRUE
ggdibbler	2025-07-31	TRUE

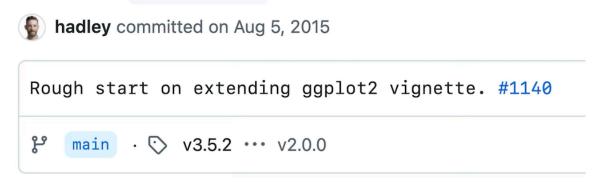
#### First release on CRAN by year

292 packages



#### The new era of ggplot2 extensions

#### Commit 6d541c3



- ggplot2 2.0.0 released December 2015, introduced ggproto
- ggplot2 book, 2nd ed released June 2016
  - references extension vignette
  - lists "add-on" packages

### Early extensions

#### From the ggplot2 book 2nd edition (2016):

#### 3.14 Add-on Packages

If the built-in tools in ggplot2 don't do what you need, you might want to use a special purpose tool built into one of the packages built on top of ggplot2. Some of the packages that I was familiar with when the book was published include:

- animInt, https://github.com/tdhock/animint, lets you make you ggplot2 graphics interactive, adding querying, filtering and linking.
- GGally, https://github.com/ggobi/ggally, provides a very flexible scatterplot matrix, amongst other tools.
- ggbio, http://www.tengfei.name/ggbio/, provides a number of specialised geoms for genomic data.
- ggdendro, https://github.com/andrie/ggdendro, turns data from tree methods in to data frames that can easily be displayed with ggplot2.
- ggfortify, https://github.com/sinhrks/ggfortify, provides fortify and autoplot methods to handle objects from some popular R packages.
- ggenealogy, https://cran.r-project.org/package=ggenealogy, helps explore and visualise genealogy data.

- ggmcmc, http://xavier-fim.net/packages/ggmcmc/, provides a set of flexible tools for visualising the samples generated by MCMC methods.
- ggparallel, https://cran.r-project.org/package=ggparallel: easily draw parallel coordinates plots, and the closely related hammock and common angle plots.
- ggtern, http://www.ggtern.com, lets you use ggplot2 to draw ternary diagrams, used when you have three variables that always sum to one.
- ggtree, https://github.com/GuangchuangYu/ggtree, provides tools to view and annotate phylogenetic tree with different types of meta-data.
- granovaGG, https://github.com/briandk/granovaGG, provides tools to visualise ANOVA results.
- plotluck, https://github.com/stefan-schroedl/plotluck: the ggplot2 version of Google's "I'm feeling lucky". It automatically creates plots for one, two or three variables.

# Beginnings of a typology

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mate	1215551	1958	TRUE	A Grammar of Animated Graph	ic TRUE	$\checkmark$						animation							х	x	Х			sitions and frames acr	
vscale	1046863	410		Multiple Fill and Colour Scales	in TRUE	$\blacksquare$			[	⊒		color/theme			~				х	x	Х	allows you to u	use multiple fill/co	olor scales in one plot.	new_scale_col
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abels	571932	82		Direct Labels for Multicolor Plo	s TRUE					<b>Z</b>		labels/text	x	х	x	x	x	x	х	х	х			ou don't need legends	
	504123	670		Extra Coordinate Systems, 'Ge		$\overline{\mathbf{Z}}$						misc		✓		$\checkmark$			х		Х			r misc functions. e.g. g	
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und	323949	602		Hacks for 'ggplot2'	TRUE							misc				_	~		Α	A	X			ore customized plots, e	

### Beginnings of a typology

- Category I. "In grammar" extensions: new geom\_, stat\_, coord\_,
  facet\_, etc. elements are provided that work with the ggplot()
  plot initialization function.
- Category II. "Complete plot" extensions: "autoplots", "out of grammar", "wrappers", many (most?) of which are not counted in our list of extensions.
- Category III. Extensions that are neither in nor out of grammar, but are, rather, "variations in dialect tailored to domain-specific needs" that extend ggplot2 in very elegant and unexpected ways