

# Snapshot plots: a visual summary of your data

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# “Table 1”

- In the social and health sciences, a “Table 1” contains a numerical summary of the study population
- We propose to give a visual summary

# Example of Table 1

- UAS respondents

Laith Alattar, Matt Messel, David Rogofsky, and Mark A. Sarney, The Use of Longitudinal Data on Social Security Program Knowledge, Social Security Bulletin, Vol. 79 No. 4, 2019, <https://www.ssa.gov/policy/docs/ssb/v79n4/v79n4p1.html>

**Table 1.**  
Weighted characteristics of UAS respondents (in percent) by survey-wave participation: 2015 and 2017

Characteristic	Wave 1 only	Both waves 1 and 2	Percentage-point difference
<b>Respondents</b>			
Number	205	724	...
Percent	22.1	77.9	...
<b>Sex</b>			
Men	47.2	50.2	-3.0
Women	52.8	49.8	3.0
<b>Age</b>			
25–35	29.3	18.9	10.4*
36–54	43.4	44.2	-0.8
55–65	27.3	36.9	-9.6
<b>Education</b>			
Less than high school diploma	10.4	8.1	2.3
High school diploma	34.5	29.9	4.6
Some college	23.7	24.2	-0.5
Bachelor's degree or higher	31.4	37.8	-6.4
<b>Race/ethnicity</b>			
White (non-Hispanic)	58.3	64.5	-6.2
Black (non-Hispanic)	14.9	15.9	-1.0
Other non-Hispanic	5.2	2.1	3.1
Hispanic or Latino	21.6	17.6	4.0
<b>Marital status</b>			
Married	54.9	63.1	-8.2
Other	45.1	36.9	8.2
<b>Employment status</b>			
Working	82.9	83.3	-0.4
Other	17.1	16.7	0.4
Mean annual income (\$)	48,719	55,810	-7,091

SOURCE: UAS 16 and UAS 94; data on marital status and employment status are from UAS 1.

NOTES: Rounded components of percentage distributions do not necessarily sum to 100.0.

# Table 1: with 2 different recruitment methods

- ABS vs PPD

Table 2a. Key Demographics by Frame and Study

	Study 1			Study 2			Study 3			Study 4		
	Base Weighted %			Base Weighted %			Base Weighted %			Base Weighted %		
	ABS	PPD	ABS + PPD	ABS	PPD	ABS + PPD	ABS	PPD	ABS + PPD	ABS	PPD	ABS + PPD
Hispanic <sup>1</sup>	11.5	22.4*	12.4	12.3	22.0*	13.2	12.7	28.0*	13.8	30.6	63.2*	35.9
Black, non-Hispanic <sup>1</sup>	11.1	27.6*	12.6	12.6	27.3*	14.0	8.3	20.7*	9.2	7.6	13.4*	8.5
White, non-Hispanic <sup>1</sup>	78.9	60.6*	77.3	77.4	60.5*	75.8	69.8	42.5*	67.8	16.0	8.7*	14.8
Asian, non-Hispanic <sup>1</sup>	5.3	2.4*	5.1	5.7	3.5*	5.5				43.9	14.5*	39.2
Non-English language interview	1.4	10.5*	2.2	2.8	8.8*	3.3	3.6	11.5*	4.2	17.7	66.0*	25.4
High School or Less <sup>1</sup>	21.3	47.4*	23.5	17.8	44.0*	20.1	19.1	44.6*	21.0	27.0	60.1*	32.3
Some college/Assoc. degree <sup>1</sup>	29.1	29.2	29.1	31.1	31.3	31.1	32.0	29.5	31.8	17.8	13.0*	17.0
College grad or higher <sup>1</sup>	49.5	22.4*	47.1	50.8	23.0*	48.3	48.7	25.4*	46.9	53.1	24.8*	48.6
Young Adult (18-24) <sup>1</sup>	4.1	7.7*	4.4	4.0	8.3*	4.4	4.2	9.8*	4.7	4.5	9.5*	5.3
Income less than 200 FPL <sup>1</sup>	35.3	66.7*	38.1	33.1	69.0*	36.4						
Income less than \$40K										32.3	60.4*	36.8
Income \$40K-\$89.9K										30.3	21.4*	28.9
Income \$90K+										35.9	8.3*	31.5
Income, below average							35.2	62.2*	37.2			
Income, Average							17.1	14.5	16.9			
Income, above average							47.1	19.7*	45.0			
Homeowner <sup>1</sup>										62.8	30*	57.5
Urban (Including Suburban)	86.5	88.3	86.7	88.6	87.5	88.5				98.1	96.4	97.9
Foreign Born	11.8	19.5*	12.5	12.1	16.5*	12.5						

Goyle, A., Sherr, S., & McPhee, C. (2025). Bridging the Gap: Harnessing Prepaid Cell Samples to Reach Traditionally Underrepresented Demographics. *Survey Practice*, 18.

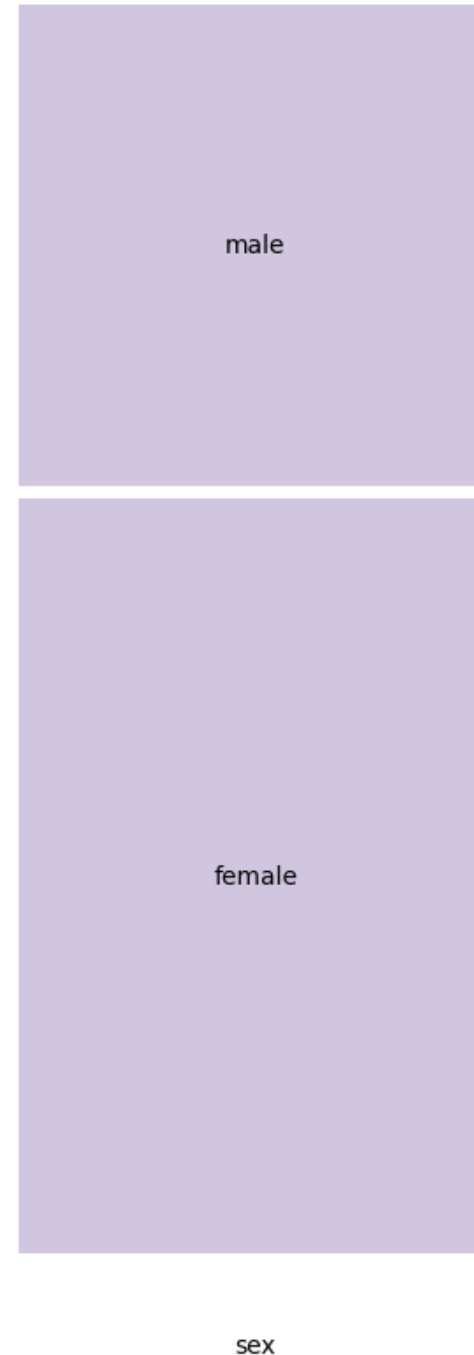
# Understanding America Study (UAS)

- Table 1
- Unweighted
- Data from Mid Feb 2026

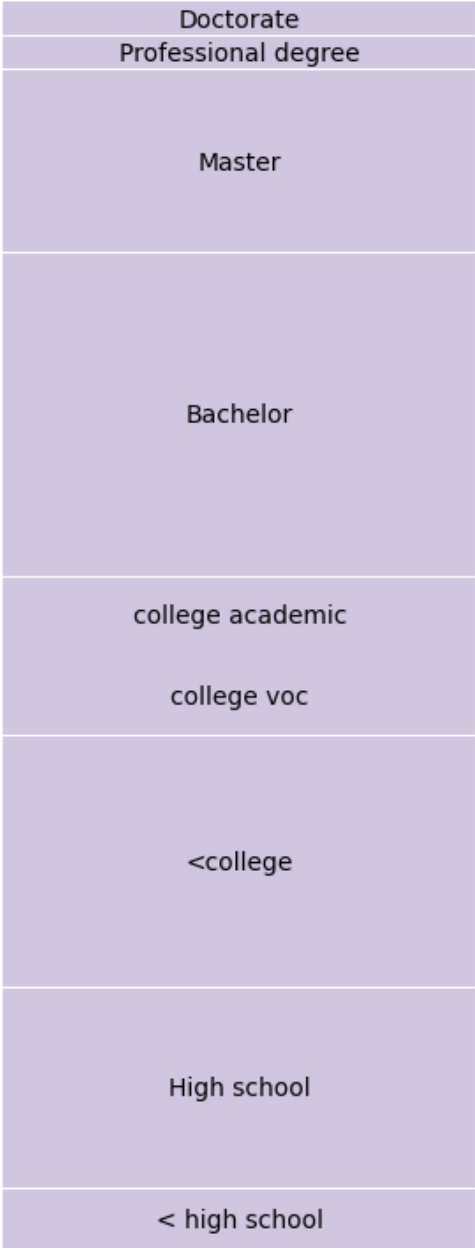
variable	category	Statistic
Gender	Female	61.0%
	Male	39.0%
Education	< high school	4.9%
	High school	16.1%
	< college	20.3%
	College, vocational	6.3%
	College, academic	6.3%
	Bachelor	26.0%
	Master	14.7%
	Professional degree	2.6%
	Doctorate	2.8%
Race	white only	71.1%
	black only	12.5%
	asian only	7.8%
	mixed	5.6%
	american indian+	2.2%
	pacific islander+	0.6%
	Marital status	never married
married		49.8%
married, living apart		1.5%
separated		2.2%
divorced		14.3%
widowed		5.3%
Age		
Household income		Mean=70496.19 se=47767.99

# Stacked bar chart of sex

- Disclaimer: All plots are unweighted
- Under and over-representation can be corrected with weights



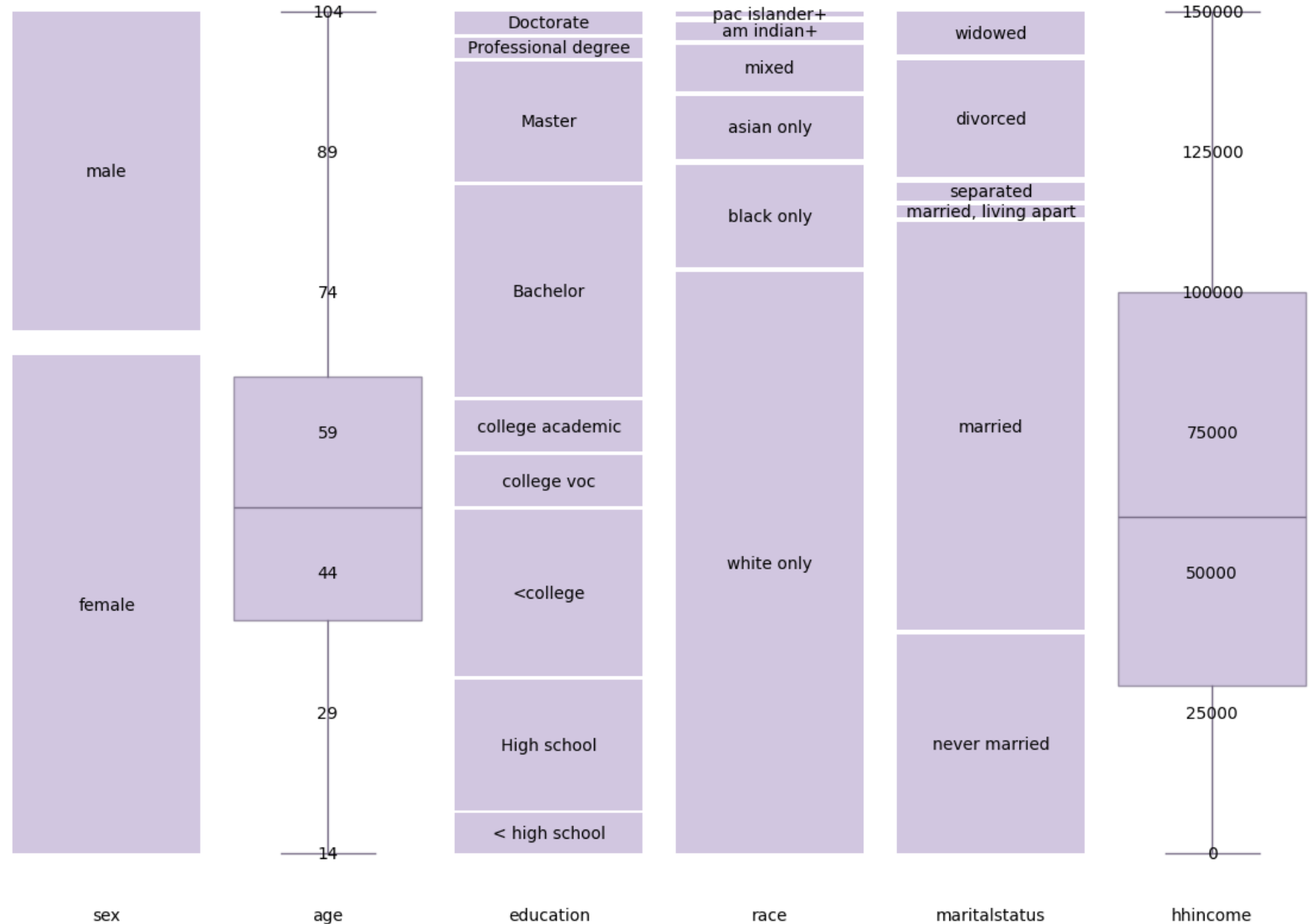
# Stacked bar chart of education



education

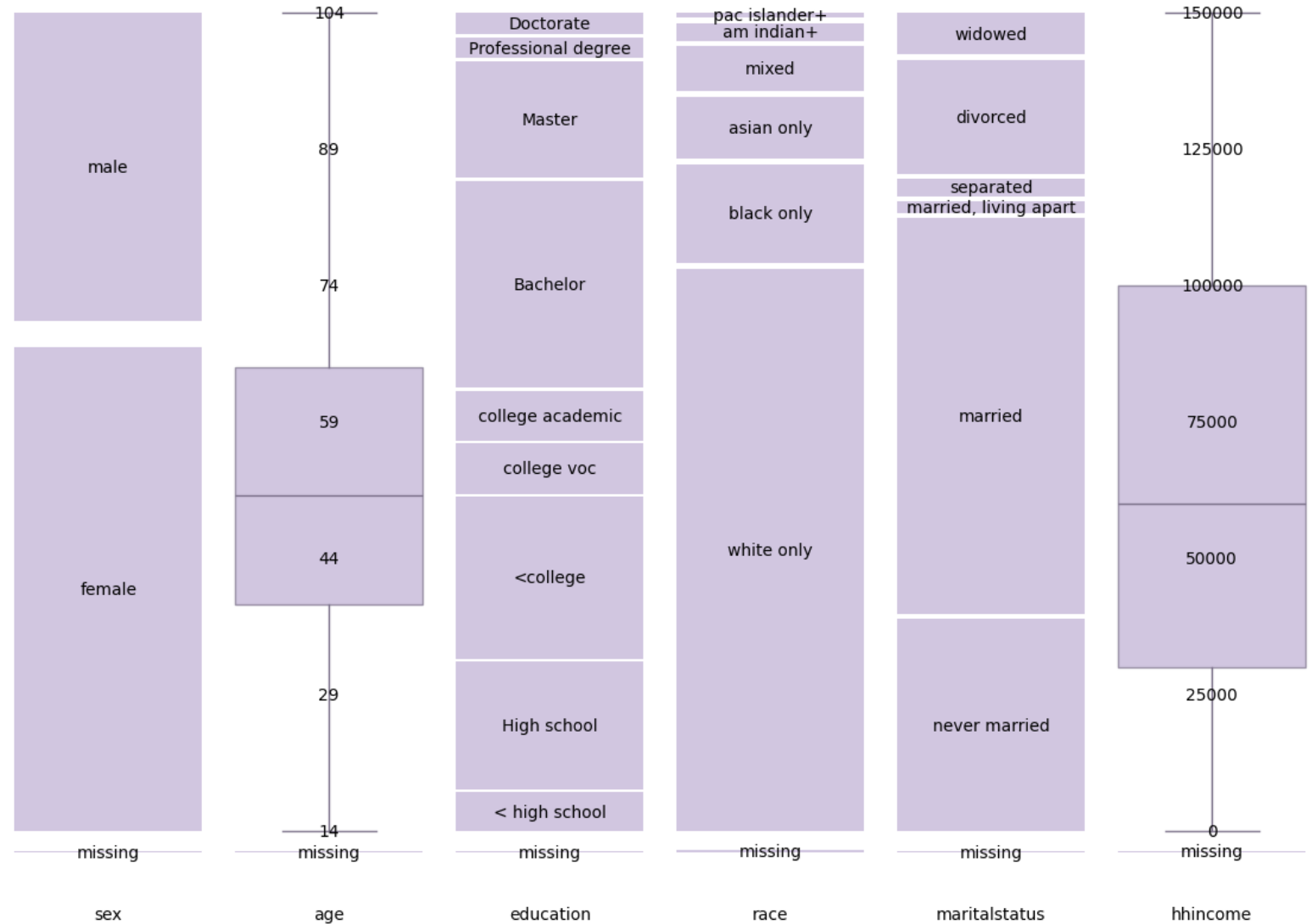
# Snapshot plot

- Each variable is in one column
- Stacked bar charts for categorical variables
- Box plot for Age and income



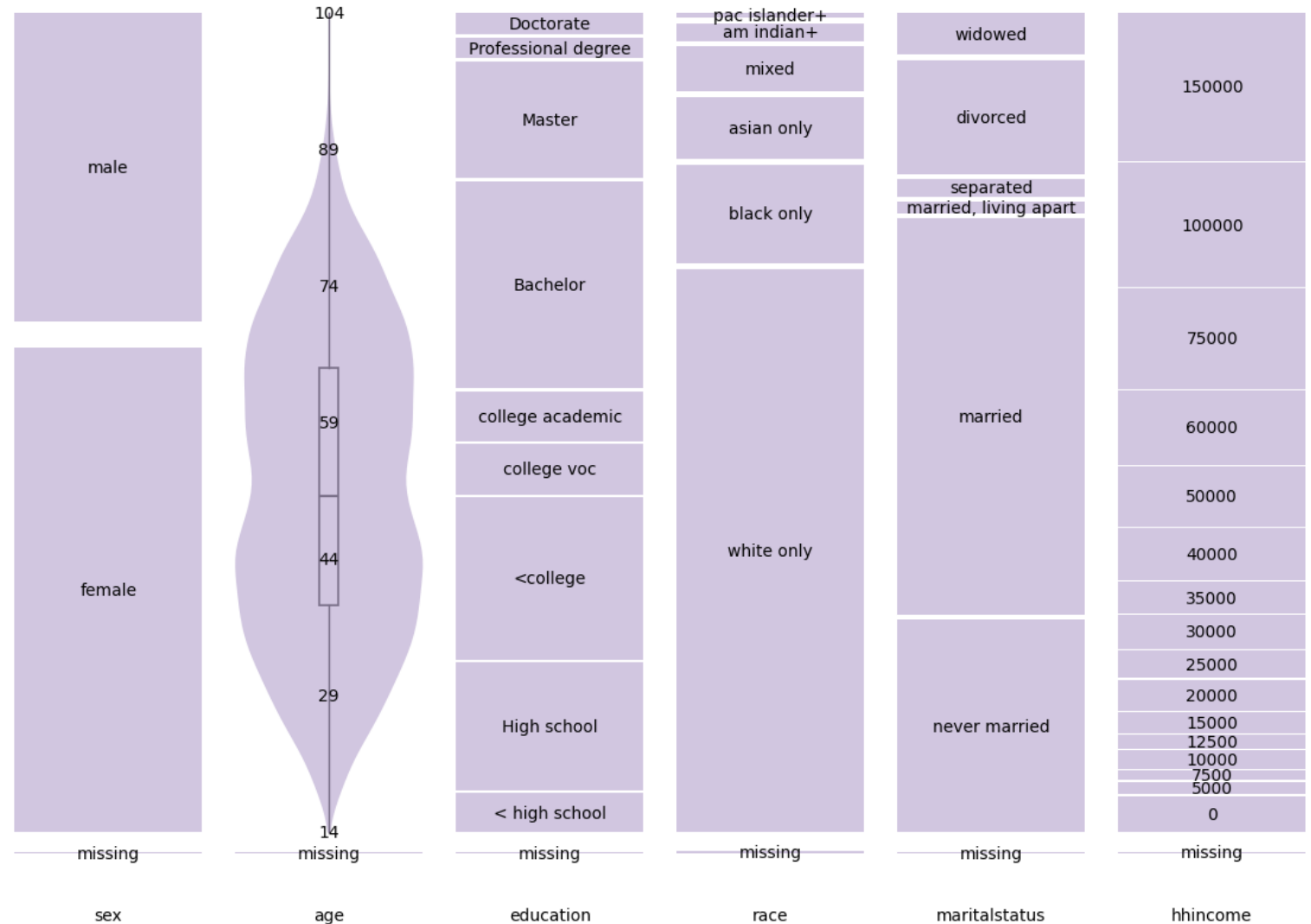
# Missing values

- Optionally, display missing values at the bottom
- Here: almost no missing values



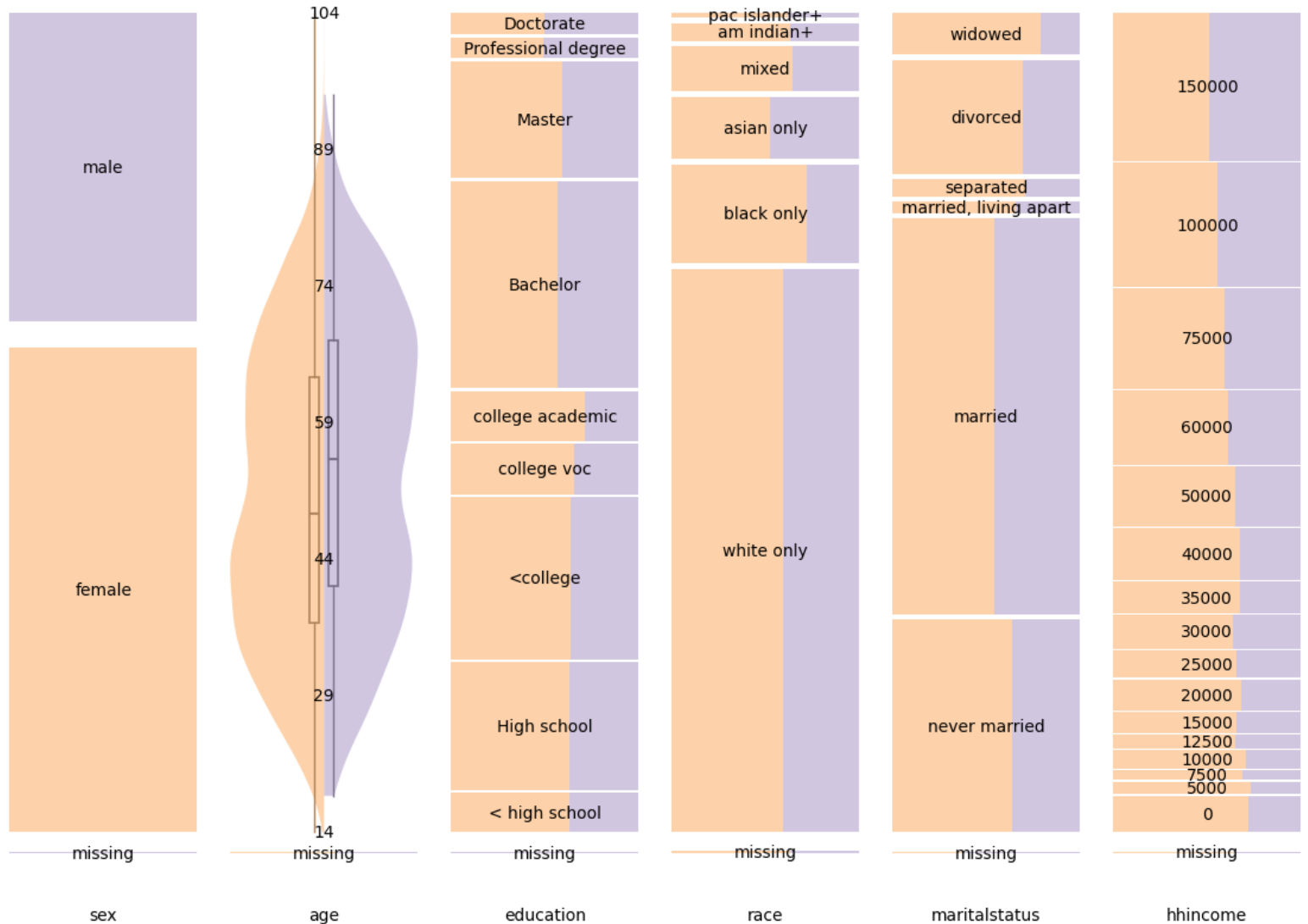
# Options for displaying numerical vars

- Box plots cannot show a bimodal distribution
- For age, we show a violinplot (with a box plot inside)
- Setting income to categorical, we see income has categories (not continuous values)



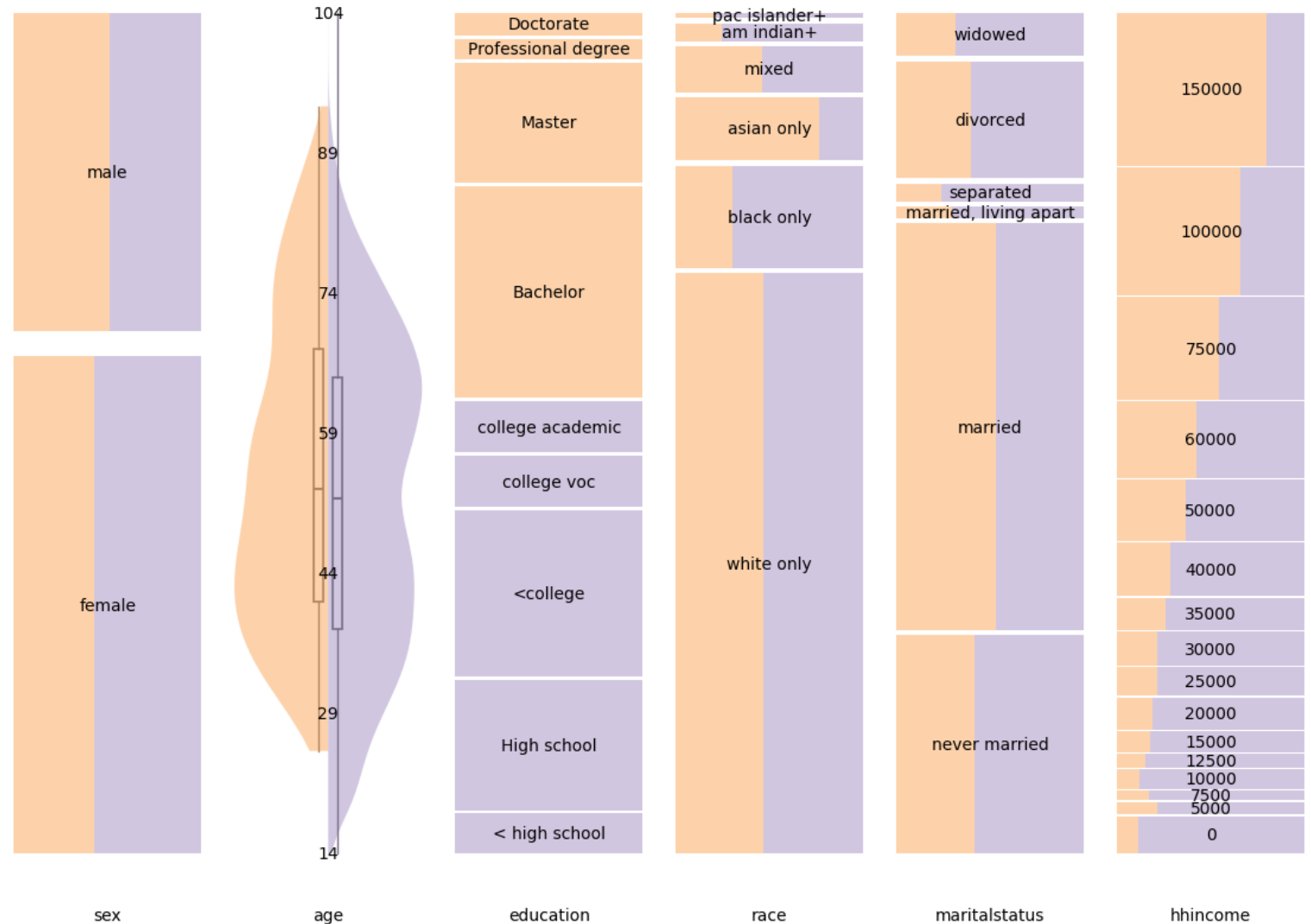
# Highlighting By sex

- Females are younger
- Females are over proportional widowed/divorced/separated
- Tend to have lower hh income



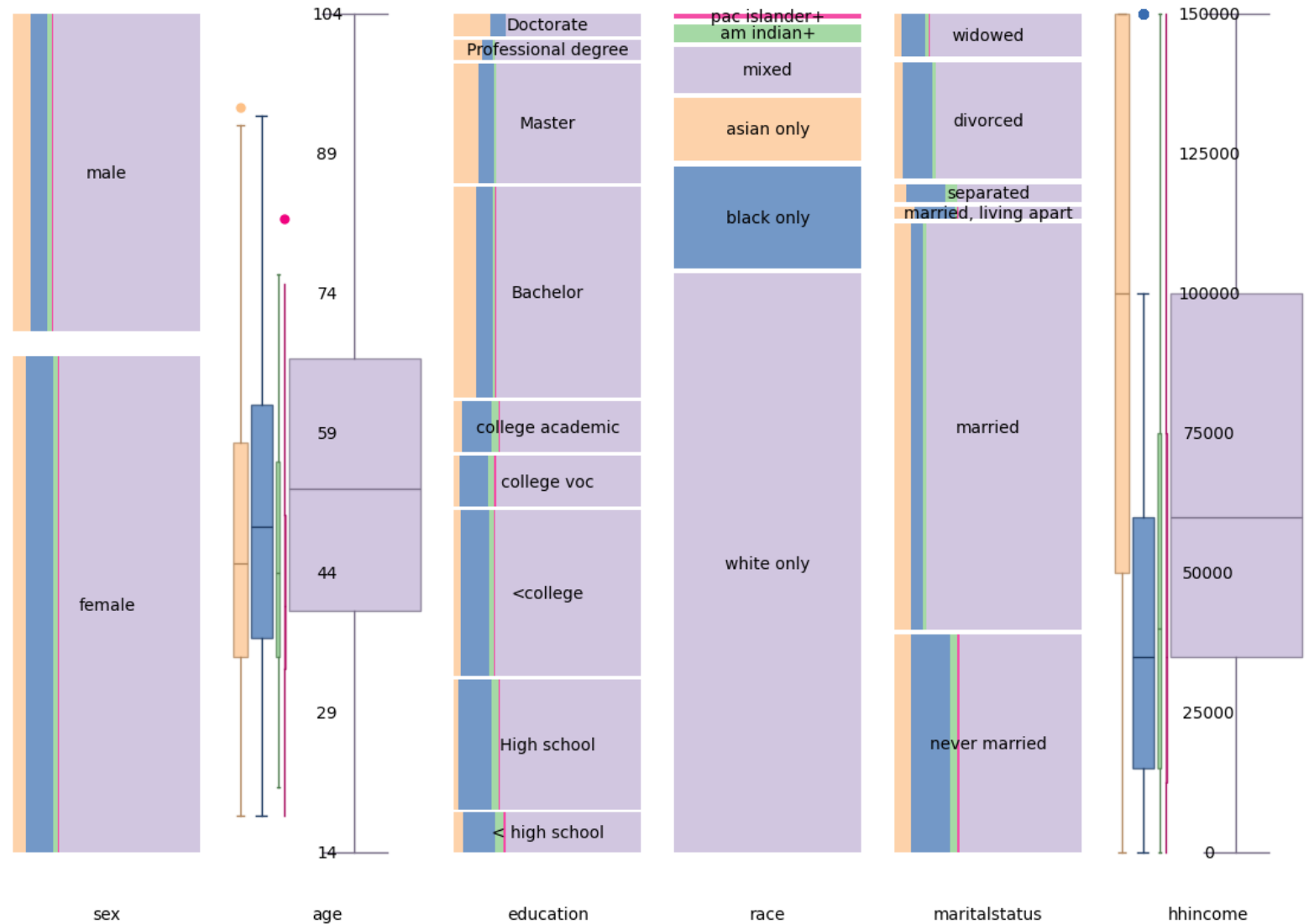
# By high education

- Bachelor and above highlighted
- Relatively few Asians with low education
- High education -> higher income



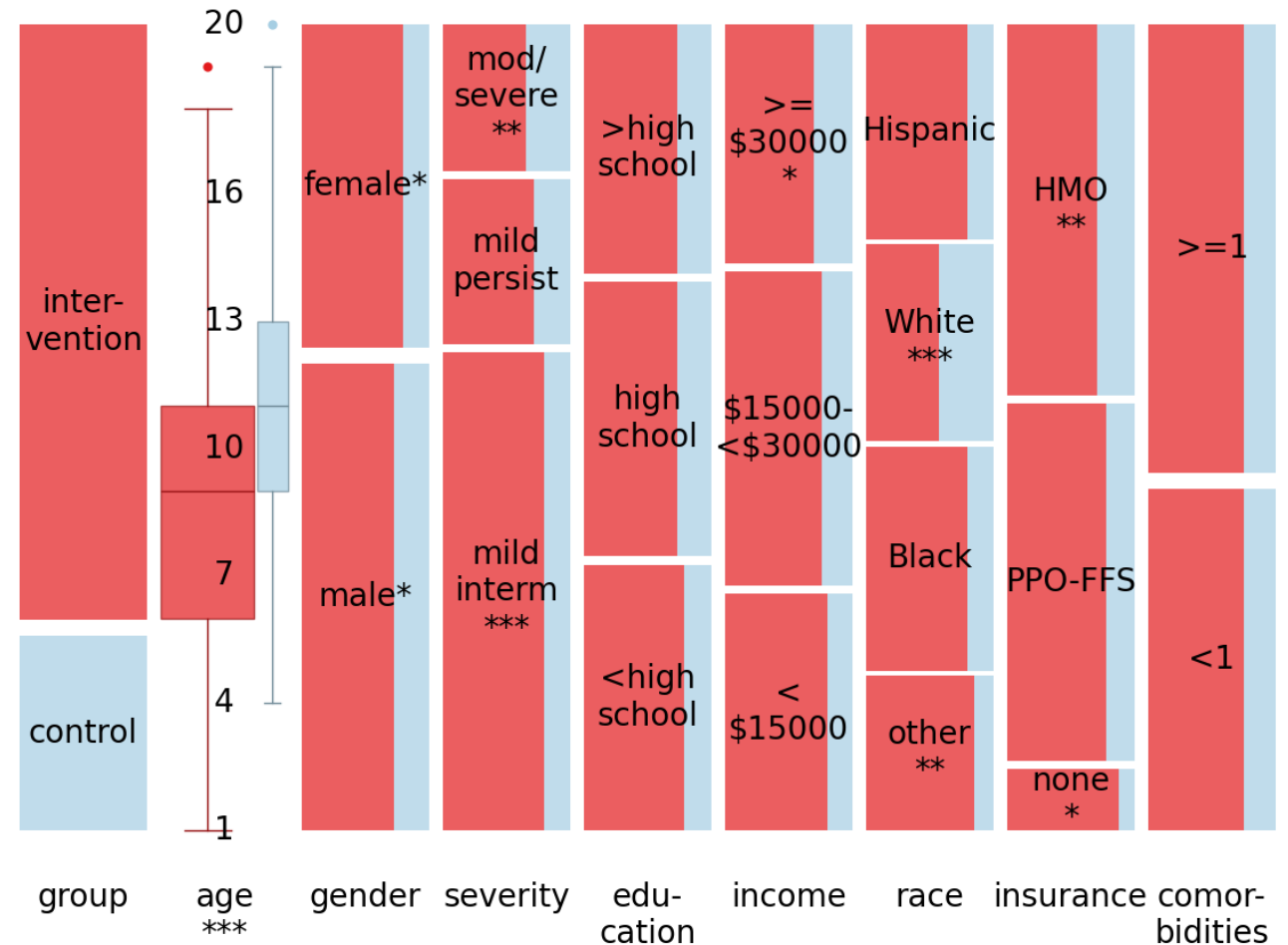
# By race

- White people are older
- Income: Asian > White > rest
- Whites are more often married



# Compare two study arms

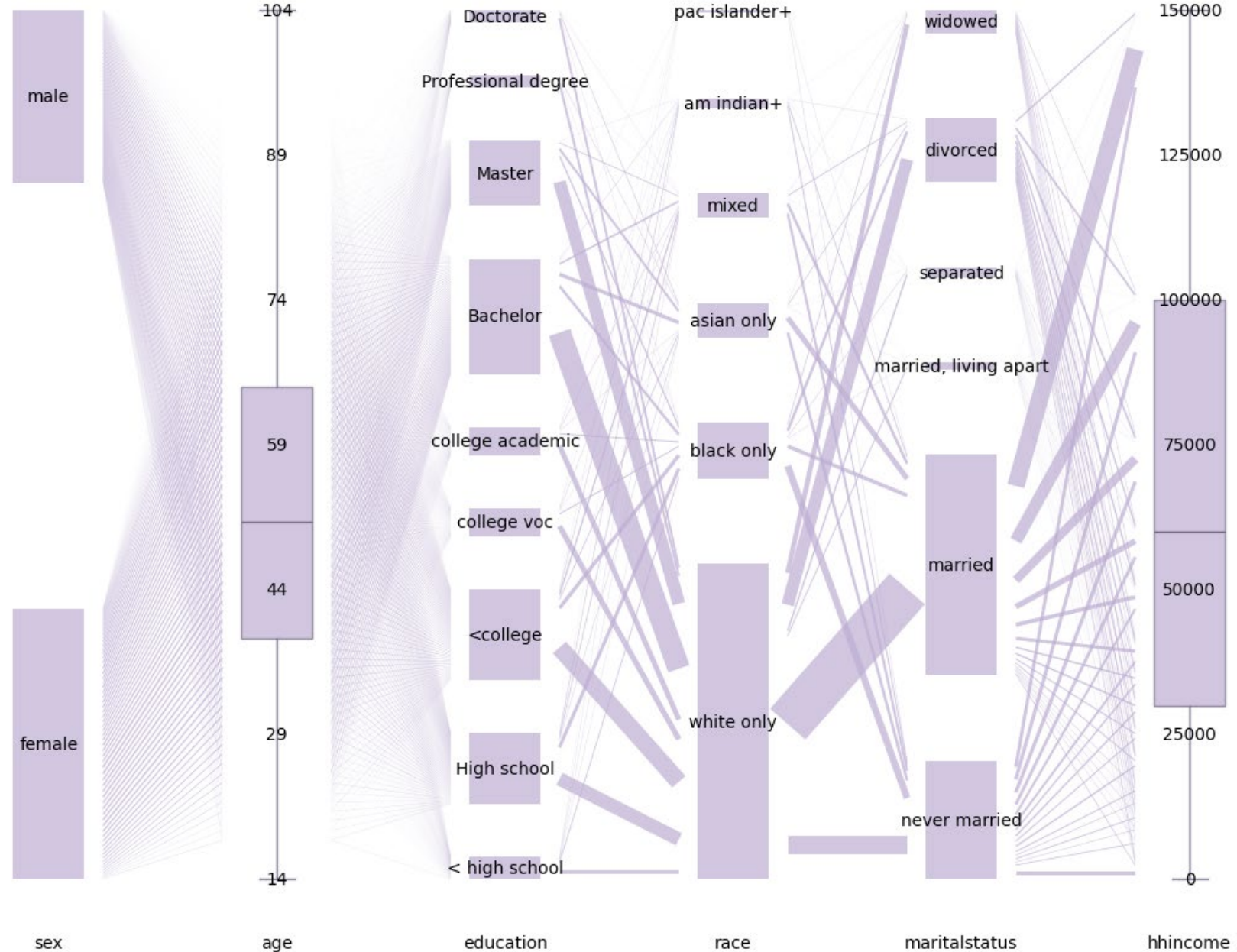
- If characteristics are the same for intervention and control, then the red lines have to line up



Based on an Asthma study

# Hammock plots

Snapshot plots are an edge case; Hammock plots have connectors in addition

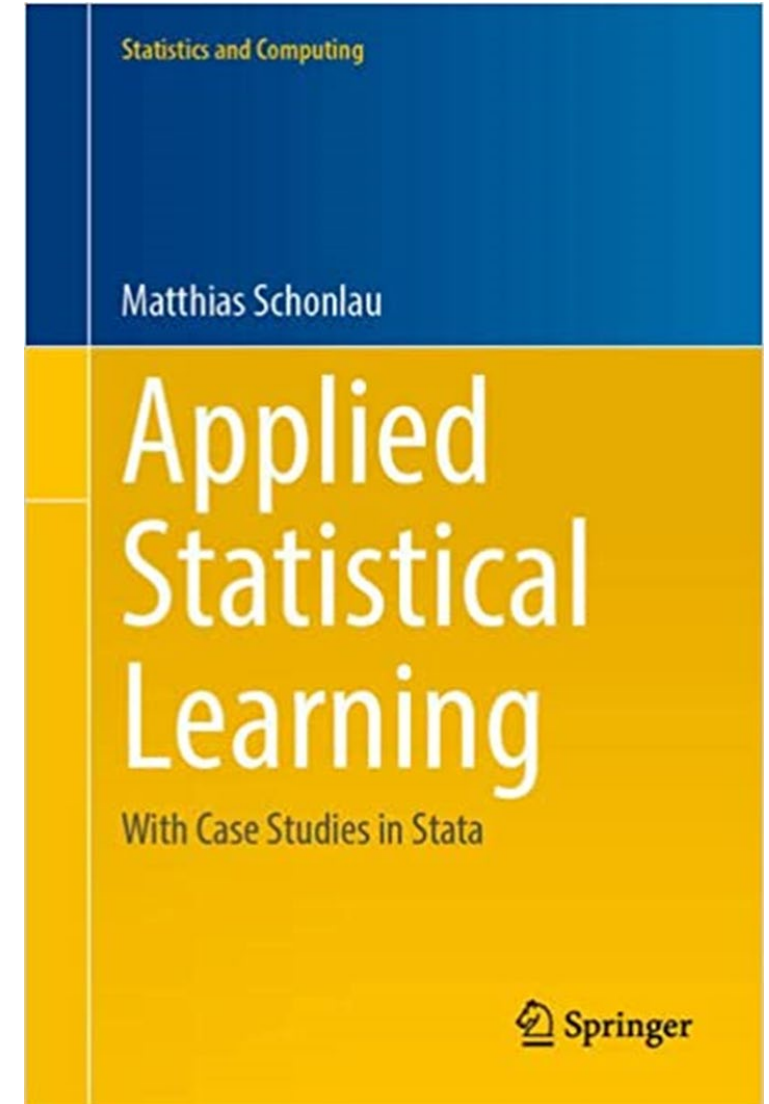


Shameless self-promotion

# Software

- Snapshot plots can be created by dropping a CSV file into this web app  
<https://hammock-plot.streamlit.app/>
- Python:  
[https://github.com/TianchengY/hammock\\_plot](https://github.com/TianchengY/hammock_plot)  
pip install hammock\_plot
- Stata: “hammock” from ssc
  - Snapshot plots are a special case of hammock plot, set option “space(1)”
- Snapshot paper under review

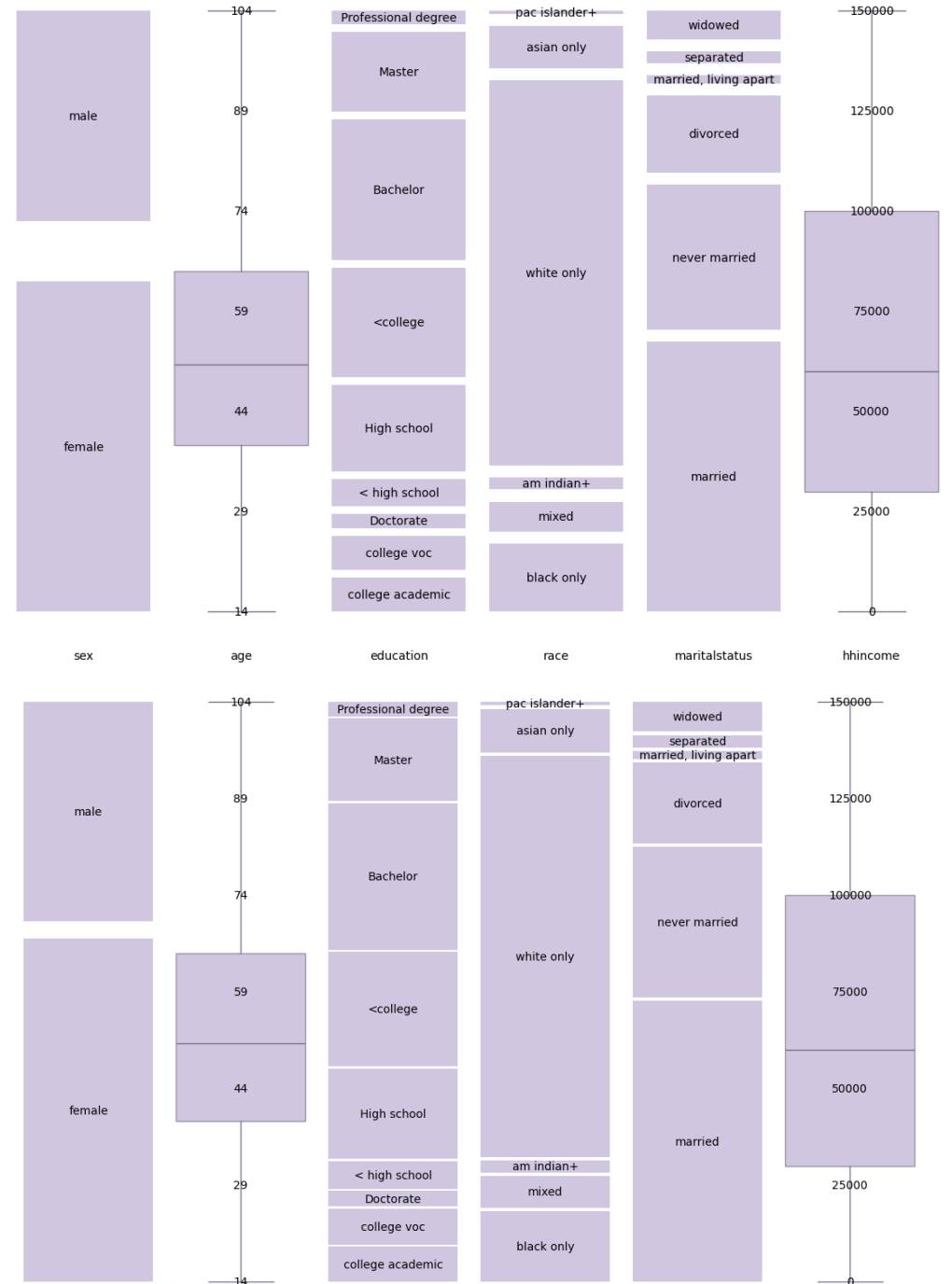
[www.schonlau.net](http://www.schonlau.net)



# Some Customizations

# Customization

- You can modify the vertical space between the bars in the “advanced” tab



# Custom order

- Custom order under tap “unibar”

## education

categorical

Categorical

Custom label order?

Custom label order



< high school ×

High school ×

<college ×

college voc ×



# Highlighting

- You can highlight specific labels or expressions such as  $x > 20$  (and more complex)
- Default highlight colors can be changed by clicking on them

Preset [Highlighting](#) Advanced Unibar-Specific

## Highlighting

Enable highlighting?

Select the variable to highlight

race ▼

Highlight type

- specific labels  
 expression

Highlight box

- side-by-side  
 stacked

Select labels to highlight

asian only × black only ×  
am indian+ × pac islander+ × × ▼

Colour #1



Colour #2



Colour #3



Colour #4



# Unibar-specific

- Set variables to categorical/numerical
- Display type:
  - Numerical : boxplot, violin plot, lumpy rugplot
  - Categorical: stacked barchart, barchart
- Custom label order for categorical vars
- Number of levels for numerical vars
- Custom label options include label fontsize, and label color

## Unibar-Specific

Variables to use same scale

Choose options

violin plot bw method ([see matplotlib documentation](#))

scott

### sex

categorical

Categorical

Custom label order?

display type

stacked bar

Custom label options?

### age

numeric

Categorical

# Advanced options

## General

Height ? Width ?

10.00 - + 15.00 - +

Minimum bar height ?

0.15 - +

Default colour ?  Display labels? ?

Display unibars? ?

Opacity

70%



Unibar Vertical Fill ? Unibar Horizontal Fill ?

97% 85%

