

Assessing Overlap and Covariate Balance

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Unadjusted/Unweighted/Unmatched Table 1

- Using tableone package

```
vars <- c("VOTED98F", "PERSONSF", "AGE", "VOTE96.1F",  
  "NEWF", "MAJORPTYF", "WARD")  
tabUnmatched <- CreateTableOne(vars = vars, strata = "PHN.C1F",  
  data = imai, test = FALSE)  
t1 <- print(tabUnmatched, smd = TRUE, showAllLevels = TRUE, va
```

		Stratified by PHN.C1F	
		level	Not Contacted Cont
##	n		10582
##	Voted in 1998 (%)	No	5881 (55.6)
##		Yes	4701 (44.4)
##	Voters in household (%)	1 Voter	5269 (49.8)
##		2+ Voters	5313 (50.2)
##	Age (years) (mean (SD))		49.43 (18.73)
##	Voted in 1996 (%)	No	4965 (46.9)
##		Yes	5617 (53.1)

Unadjusted/Unweighted/Unmatched Table 1

```
knitr::kable(t1)
```

	level	Not Contacted	Contacted	SMD
n		10582	247	
Voted in 1998 (%)	No	5881 (55.6)	87 (35.2)	0.418
	Yes	4701 (44.4)	160 (64.8)	
Voters in household (%)	1 Voter	5269 (49.8)	119 (48.2)	0.032
	2+ Voters	5313 (50.2)	128 (51.8)	
Age (years) (mean (SD))		49.43 (18.73)	58.31 (19.85)	0.460
Voted in 1996 (%)	No	4965 (46.9)	71 (28.7)	0.382
	Yes	5617 (53.1)	176 (71.3)	
New voter (%)	Previous Voter	8452 (79.9)	219 (88.7)	0.243
	New Voter	2130 (20.1)	28 (11.3)	
Party affiliation (%)	Republican	2701 (25.5)	49 (19.8)	0.136
	Democrat	7881 (74.5)	198 (80.2)	
Ward of residence (%)	2	317 (3.0)	3 (1.2)	0.565
	3	273 (2.6)	3 (1.2)	
	4	234 (2.2)	2 (0.8)	
	5	200 (1.9)	4 (1.6)	
	6	435 (4.1)	5 (2.0)	
	7	337 (3.2)	3 (1.2)	
	8	360 (3.4)	7 (2.8)	
	9	387 (3.7)	9 (3.6)	
	10	452 (4.3)	16 (6.5)	
	11	451 (4.3)	19 (7.7)	
	12	364 (3.4)	9 (3.6)	
	13	435 (4.1)	10 (4.0)	
	14	383 (3.6)	6 (2.4)	
	15	329 (3.1)	8 (3.2)	
	16	240 (2.3)	5 (2.0)	
	17	500 (4.7)	19 (7.7)	
	18	578 (5.5)	21 (8.5)	

Other Graphical Measures

- Standardized mean difference is one measure of differences between groups
- SMD does not help assess the positivity assumption (covariate overlap)
- Technically need the entire (joint) distribution to be the same between groups not just measure of central tendency
- Thus, plotting data is of key importance; use `cobalt` and `WeightIt` packages

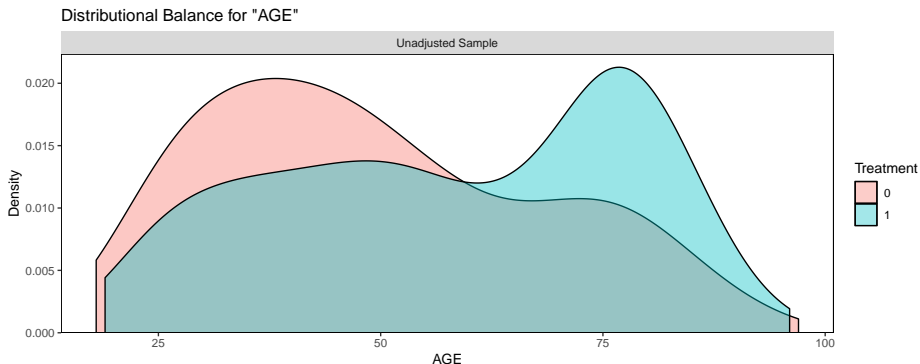
Create WeightIt object

- Set it up to (eventually) do propensity score weighting but for now will do unadjusted analyses

```
W.out <- weightit(PHN.C1 ~ (PERSONSF + VOTE96.1F + NEWF + MAJOC  
                  method = "ps", estimand = "ATE")
```

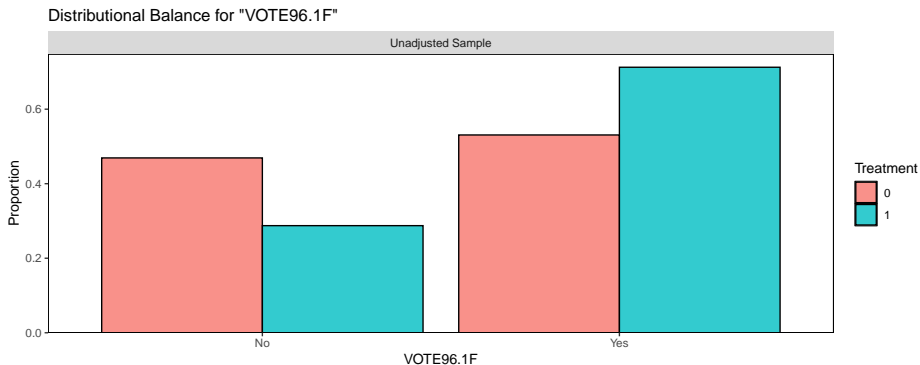
Create Plots of Distribution of Key Variables

```
bal.plot(W.out, var.name = "AGE", which = "unadjusted")
```



Create Plots of Distribution of Key Variables

```
bal.plot(W.out, var.name = "VOTE96.1F", which = "unadjusted")
```



Weighted Differences in Key Variables Between Groups

```
ps <- predict(p1, type = "response")
imai$weight <- imai$PHN.C1/ps + (1-imai$PHN.C1)/(1-ps)
imaiSvy <- svydesign(ids = ~ 1, data = imai, weights = ~ weight)

tabWeighted <- svyCreateTableOne(vars = vars, strata = "PHN.C1F",
  data = imaiSvy, test = FALSE)
t2 <- print(tabWeighted, smd = TRUE, showAllLevels = TRUE, varLabels = TRUE)
```

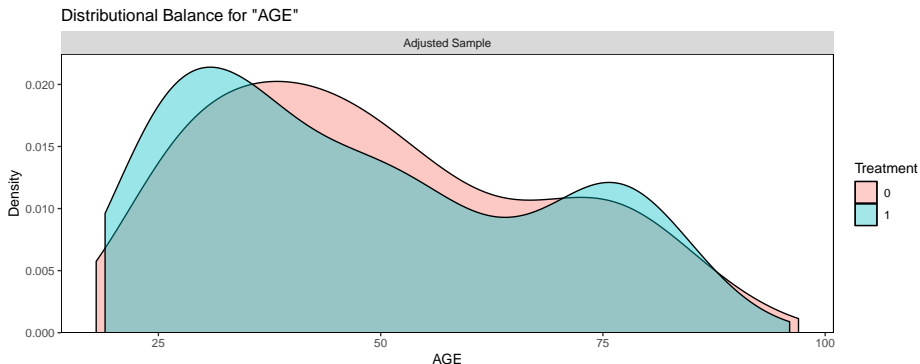

Weighted Differences in Key Variables Between Groups

```
knitr::kable(t2)
```

	level	Not Contacted	Contacted	SMD
n		10828.9	11083.5	
Voted in 1998 (%)	No	5992.1 (55.3)	4996.6 (45.1)	0.206
	Yes	4836.8 (44.7)	6086.9 (54.9)	
Voters in household (%)	1 Voter	5388.1 (49.8)	5890.4 (53.1)	0.068
	2+ Voters	5440.8 (50.2)	5193.0 (46.9)	
Age (years) (mean (SD))		49.63 (18.79)	48.10 (19.84)	0.079
Voted in 1996 (%)	No	5036.1 (46.5)	5470.8 (49.4)	
	Yes	5792.8 (53.5)	5612.6 (50.6)	0.057
New voter (%)	Previous Voter	8670.8 (80.1)	8469.7 (76.4)	
	New Voter	2158.1 (19.9)	2613.8 (23.6)	0.028
Party affiliation (%)	Republican	2750.0 (25.4)	2949.0 (26.6)	
	Democrat	8078.9 (74.6)	8134.5 (73.4)	0.540
Ward of residence (%)	2	323.3 (3.0)	171.7 (1.5)	
	3	279.2 (2.6)	84.9 (0.8)	
	4	238.2 (2.2)	71.8 (0.6)	
	5	204.3 (1.9)	143.9 (1.3)	
	6	446.8 (4.1)	145.2 (1.3)	
	7	343.7 (3.2)	262.7 (2.4)	
	8	367.9 (3.4)	436.6 (3.9)	
	9	394.5 (3.6)	452.6 (4.1)	
	10	461.2 (4.3)	751.6 (6.8)	
	11	467.4 (4.3)	625.6 (5.6)	
	12	372.0 (3.4)	416.4 (3.8)	
	13	445.4 (4.1)	319.5 (2.9)	
	14	391.9 (3.6)	177.0 (1.6)	
	15	335.6 (3.1)	451.3 (4.1)	
	16	244.5 (2.3)	304.9 (2.8)	

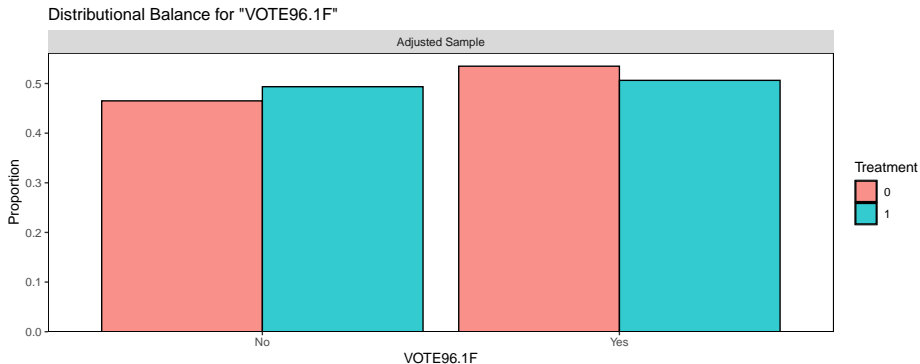
Create Plots of Distribution of Key Variables

```
bal.plot(W.out, var.name = "AGE")
```



Create Plots of Distribution of Key Variables

```
bal.plot(W.out, var.name = "VOTE96.1F")
```



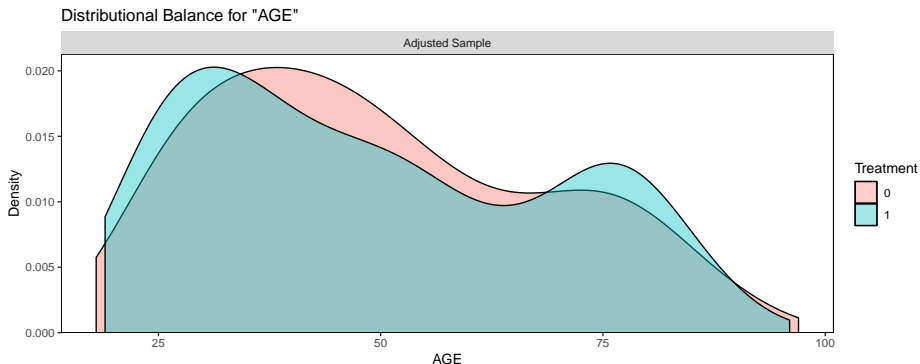
Create WeightIt object

- Are there are other ways of defining weights? YES! Many available as part of weightit
- Many directly target balance of the covariates

```
W.out <- weightit(PHN.C1 ~ (PERSONSF + VOTE96.1F + NEWF + MAJOC  
                    method = "cbps", estimand = "ATE")
```

Create Plots of Distribution of Key Variables

```
bal.plot(W.out, var.name = "AGE")
```



Create Plots of Distribution of Key Variables

```
bal.plot(W.out, var.name = "VOTE96.1F")
```

