

# Chapter 9 of *Data Analysis for Experimental Design*

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Here I will show a very easy way to tests between-subjects factorial designs where each factor has only one two levels. The `aov()` command does a nice job. Because all the terms in the factorial design have one degree of freedom, the omnibus tests are equivalent to contrasts.

First, I have a data file that includes the variable names A, B, C and data as column names (header = T in the `read.table` call). Second, attach the data matrix so the variable names are accessible. Third, run the `aov` command. The output is identical to that shown in Table 9.4.

```
datamatrix <- read.table("data.txt",header=T)
attach(datamatrix)
summary(aov(data~A*B*C))
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
A	1	101.250	101.250	91.8136	1.739e-14	***
B	1	22.050	22.050	19.9950	2.835e-05	***
C	1	64.800	64.800	58.7607	6.447e-11	***
A:B	1	0.050	0.050	0.0453	0.8319817	
A:C	1	16.200	16.200	14.6902	0.0002686	***
B:C	1	3.200	3.200	2.9018	0.0927957	.
A:B:C	1	1.800	1.800	1.6322	0.2054974	
Residuals	72	79.400	1.103			