Design

Each infant was exposed to each stimulus. Therefore infants are crossed with stimuli and Type of Stimulus is a within-subjects factor.

```
data;
input face 1-3 cc 5-7 news 9-11 sc 13-15;
datalines;
3.1    3.5     2.0    2.1
1.3    0.7     1.0    0.8
2.1    1.8     1.5    1.0
1.5    1.0     0.9    0.7
0.9    0.7     1.2    1.1
1.6    1.9     0.9    1.1
1.8    1.5     1.1    0.9
1.4    1.3     1.0    0.8
2.7    2.4     1.5    1.4
1.5    1.3     1.0    0.9
1.4    1.0     1.3    0.8
1.6    1.6     1.2    1.3
1.3    1.6     1.7    1.9
1.3    1.0     1.5    1.7
proc print double;
proc means maxdec = 3;
proc glm;
model face cc news sc =/nouni;
repeated stimulus 4/nom;
run;
quit;
```

Results of proc print were edited out.

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
face	14	1.679	0.590	0.900	3.100
cc	14	1.521	0.743	0.700	3.500
news	14	1.271	0.329	0.900	2.000
sc	14	1.179	0.444	0.700	2.100

The GLM Procedure

Number of Observations Read 14
Number of Observations Used 14

The GLM Procedure
Repeated Measures Analysis of Variance

Repeated Measures Level Information

Dependent Variable	face	cc	news	sc
Level of stimulus	1	2	3	4

The SAS System 29

The GLM Procedure
Repeated Measures Analysis of Variance
Univariate Tests of Hypotheses for Within Subject Effects

Source	DF	Type III SS	Mean Square	F Value	Pr > F
stimulus	3	2.20196429	0.73398810	6.43	0.0012
Error(stimulus)	39	4.45053571	0.11411630		

Source	Adj Pr > F G - G	Adj Pr > F H - F
stimulus	0.0113	0.0089
Error(stimulus)		

Greenhouse-Geisser Epsilon 0.5040
Huynh-Feldt Epsilon 0.5561

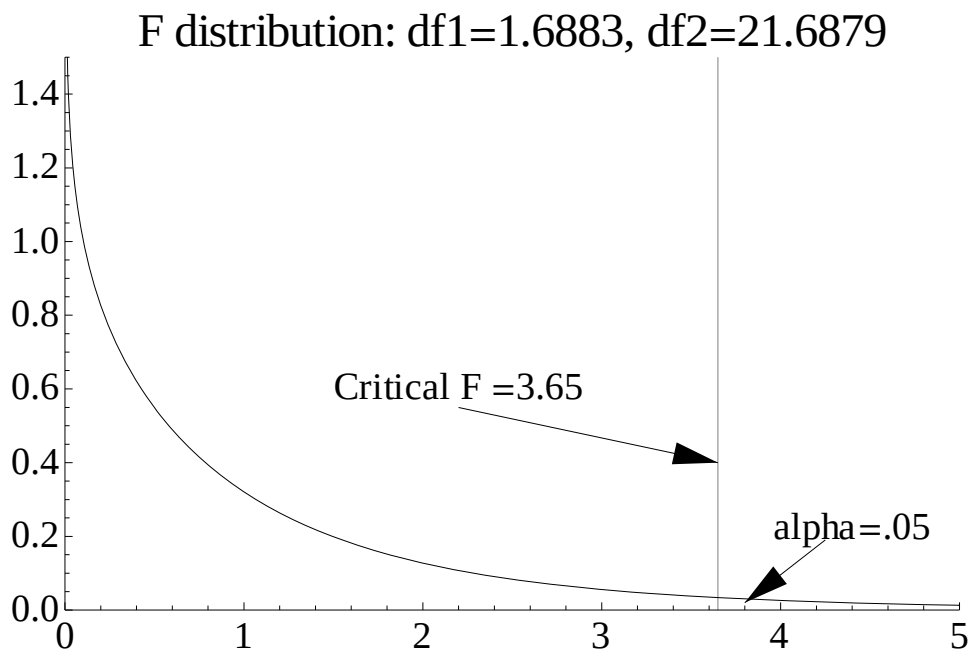
```
*the following code calculates critical values for F;
data;
input alpha df1 df2 epsilon;
prob=1-alpha;
cdf1=df1*epsilon;
cdf2=df2*epsilon;
cvalF=finv(prob, cdf1, cdf2);
cards;
.05 3 39 .5561
proc print;
run;
```

Obs	alpha	df1	df2	epsilon	prob	cdf1	cdf2	cvalF
1	0.05	3	39	0.5561	0.95	1.6683	21.6879	3.65307

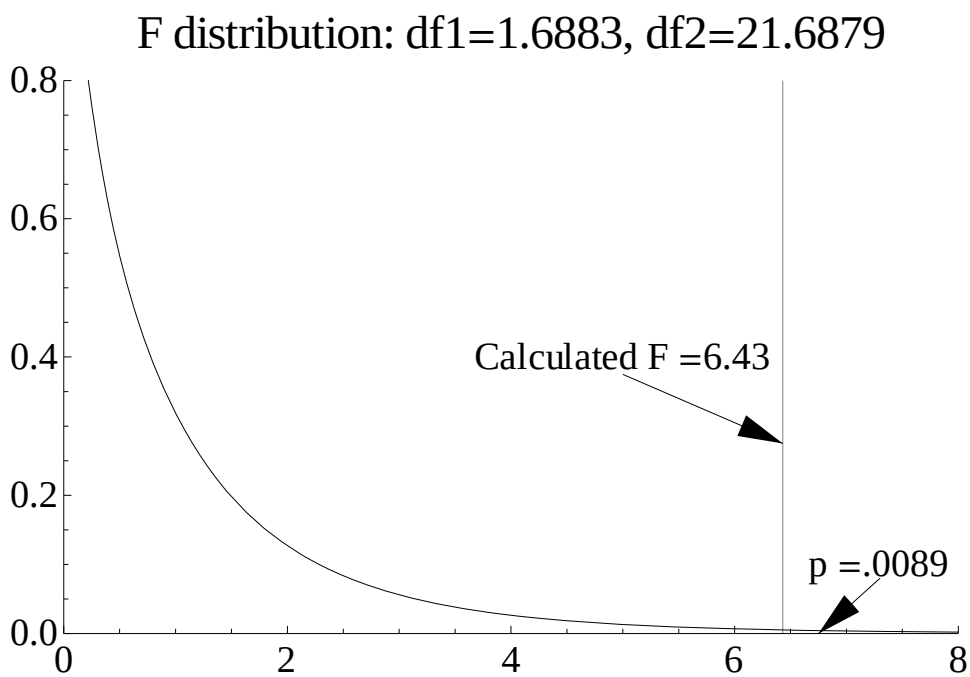
1. $H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4$

   $H_1 : \mu_p \neq \mu_{p'}$ for at least one pair of means

2. $F_{\alpha,\varepsilon(P-1),\varepsilon(n-1)(P-1)} = F_{.05,\ .5561(4-1),\ .5561(14-1)(4-1)} = 3.65$



3. $F(1.67, 21.69) = 6.43,\ p < .0089$



4. Reject H_0

5. There is sufficient evidence to conclude that stimuli affect gaze time. The sample means indicate that mean gaze time is longer for more complex stimuli (faces and concentric circles) than for simpler stimuli (simple circles and newsprint).

Table 1

Descriptive Statistics

Stimulus	Mean	SD
Face	1.68	.59
Concentric Circles	1.52	.74
News	1.27	.33
Simple Circles	1.18	.44