**PROBABILITY OF RESPONSES**

**Models for the probability of responses (strikes or tensions) to the elementary motion with disparity of preceding Figure Motion (FMdisp: crossed or uncrossed) and disparity of Elementary Motion (EMdisp: crossed or uncrossed) as factors and animal identity as a random factor.**

exp4=read.csv('./Experiment4.csv')

exp4$EMdisp=factor(exp4$EMdisp)

exp4$Animal=factor(exp4$Animal)

exp4FMdisp=factor(exp4$FMdisp)

exp4$Motion=factor(exp4$Motion)

**Without interaction BEST MODEL**

m2=glmer(Presp~FMdisp+EMdisp+(1|Animal),family=binomial(link='logit'), data=exp4)

summary(m2)

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) ['glmerMod']

Family: binomial ( logit )

Formula: Presp ~ FMdisp + EMdisp + (1 | Animal)

Data: exp4

AIC BIC logLik deviance df.resid

414.8 431.7 -203.4 406.8 508

Scaled residuals:

Min 1Q Median 3Q Max

-7.5982 -0.4129 -0.1542 0.4225 3.2375

Random effects:

Groups Name Variance Std.Dev.

Animal (Intercept) 1.323 1.15

Number of obs: 512, groups: Animal, 8

Fixed effects:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -3.8178 0.5391 -7.082 1.43e-12 \*\*\*

FMdisp 2.3326 0.3024 7.714 1.22e-14 \*\*\*

EMdisp1 3.7081 0.3379 10.975 < 2e-16 \*\*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:

(Intr) FMdisp

FMdisp -0.509

EMdisp1 -0.557 0.526

**Only FMdisp model**

m3=glmer(Presp~FMdisp+(1|Animal),family=binomial(link='logit'), data=exp4)

summary(m3)

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) ['glmerMod']

Family: binomial ( logit )

Formula: Presp ~ FMdisp + (1 | Animal)

Data: exp4

AIC BIC logLik deviance df.resid

621.4 634.1 -307.7 615.4 509

Scaled residuals:

Min 1Q Median 3Q Max

-1.8517 -0.7530 -0.4111 0.8547 2.8305

Random effects:

Groups Name Variance Std.Dev.

Animal (Intercept) 0.4431 0.6657

Number of obs: 512, groups: Animal, 8

Fixed effects:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -1.1598 0.2802 -4.140 3.48e-05 \*\*\*

FMdisp 1.3681 0.2023 6.763 1.35e-11 \*\*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:

(Intr)

FMdisp -0.410

**Only EMdisp model**

m4=glmer(Presp~EMdisp+(1|Animal),family=binomial(link='logit'), data=exp4)

summary(m4)

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) ['glmerMod']

Family: binomial ( logit )

Formula: Presp ~ EMdisp + (1 | Animal)

Data: exp4

AIC BIC logLik deviance df.resid

491.3 504.0 -242.7 485.3 509

Scaled residuals:

Min 1Q Median 3Q Max

-3.2214 -0.5274 -0.2197 0.5399 4.1452

Random effects:

Groups Name Variance Std.Dev.

Animal (Intercept) 0.864 0.9295

Number of obs: 512, groups: Animal, 8

Fixed effects:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -2.1390 0.3887 -5.503 3.74e-08 \*\*\*

EMdisp1 2.9761 0.2676 11.123 < 2e-16 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:

(Intr)

EMdisp1 -0.445

**PROBABILITY OF STRIKES**

**Models for the probability of strikes to the elementary motion with disparity of preceding Figure Motion (FMdisp: crossed or uncrossed) and disparity of Elementary Motion (EMdisp: crossed or uncrossed) as factors and animal identity as a random factor**

exp4=read.csv('./Experiment4')

**Without interaction BEST MODEL**

m2=glmer(Pstrike~FMdisp+EMdisp+(1|Animal),family=binomial(link='logit'), data=exp4)

summary(m2)

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) ['glmerMod']

Family: binomial ( logit )

Formula: Pstrike ~ FMdisp + EMdisp + (1 | Animal)

Data: exp4

AIC BIC logLik deviance df.resid

234.2 251.2 -113.1 226.2 508

Scaled residuals:

Min 1Q Median 3Q Max

-12.8262 -0.1556 -0.0670 -0.0100 11.7078

Random effects:

Groups Name Variance Std.Dev.

Animal (Intercept) 6.917 2.63

Number of obs: 512, groups: Animal, 8

Fixed effects:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -8.1037 1.3531 -5.989 2.11e-09 \*\*\*

FMdisp 3.8126 0.5972 6.384 1.73e-10 \*\*\*

EMdisp1 4.2974 0.6423 6.690 2.23e-11 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:

(Intr) FMdisp

FMdisp -0.619

EMdisp1 -0.634 0.581

**Only FMdisp model**

m3=glmer(Pstrike~FMdisp+(1|Animal),family=binomial(link='logit'), data=exp4)

summary(m3)

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) ['glmerMod']

Family: binomial ( logit )

Formula: Pstrike ~ FMdisp + (1 | Animal)

Data: exp4

AIC BIC logLik deviance df.resid

330.7 343.5 -162.4 324.7 509

Scaled residuals:

Min 1Q Median 3Q Max

-2.6382 -0.3705 -0.1555 -0.1082 9.2445

Random effects:

Groups Name Variance Std.Dev.

Animal (Intercept) 2.942 1.715

Number of obs: 512, groups: Animal, 8

Fixed effects:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -3.7663 0.7101 -5.304 1.14e-07 \*\*\*

FMdisp 2.4620 0.3779 6.516 7.24e-11 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:

(Intr)

FMdisp -0.439

**Only EMdisp model**

m4=glmer(Pstrike~EMdisp+(1|Animal),family=binomial(link='logit'), data=exp4)

summary(m4)

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) ['glmerMod']

Family: binomial ( logit )

Formula: Pstrike ~ EMdisp + (1 | Animal)

Data: exp4

AIC BIC logLik deviance df.resid

314.5 327.2 -154.3 308.5 509

Scaled residuals:

Min 1Q Median 3Q Max

-3.1571 -0.3771 -0.1351 -0.0856 3.7761

Random effects:

Groups Name Variance Std.Dev.

Animal (Intercept) 3.338 1.827

Number of obs: 512, groups: Animal, 8

Fixed effects:

Estimate Std. Error z value Pr(>|z|)

(Intercept) -4.1928 0.7732 -5.423 5.86e-08 \*\*\*

EMdisp1 2.9652 0.4367 6.790 1.12e-11 \*\*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Correlation of Fixed Effects:

(Intr)

EMdisp1 -0.483