

Piceda et al. 2023 - Elevation as an Auditory Cue for Distance Perception

2024-03-04

Data entry

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
rm(list=ls())
results_tbl <- read.csv("./DatosUnificados/Dresults.csv", header = TRUE, sep = ',', stringsAsFactors = FALSE)
```

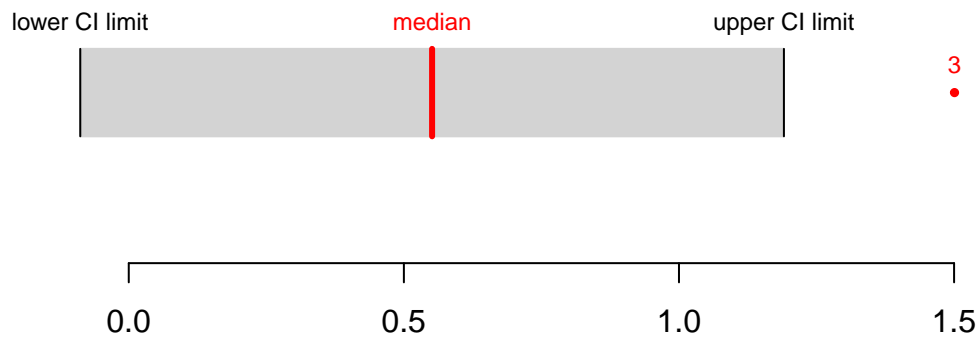
Analysis outliers

You can also embed plots, for example:

```
## 'summarise()' has grouped output by 'subject'. You can override using the
## '.groups' argument.
```

Detecting values out of the Confidence Interval $CI = \text{Median} \pm 3 \text{ MAD}$

1 outliers are detected

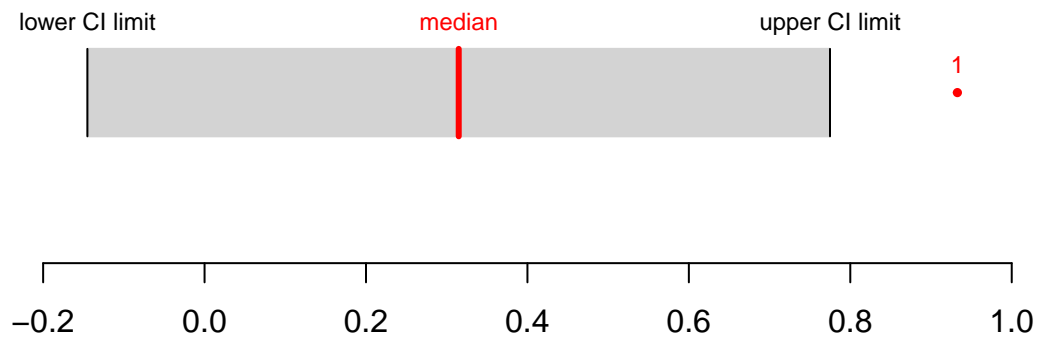


```
## # A tibble: 1 x 3
##   subject condition mBiasUnsigned
##   <fct>   <fct>         <dbl>
## 1 S003   Ear level      1.50
```

```
## 'summarise()' has grouped output by 'subject'. You can override using the
## '.groups' argument.
```

Detecting values out of the Confidence Interval $CI = \text{Median} \pm 3 \text{ MAD}$

1 outliers are detected



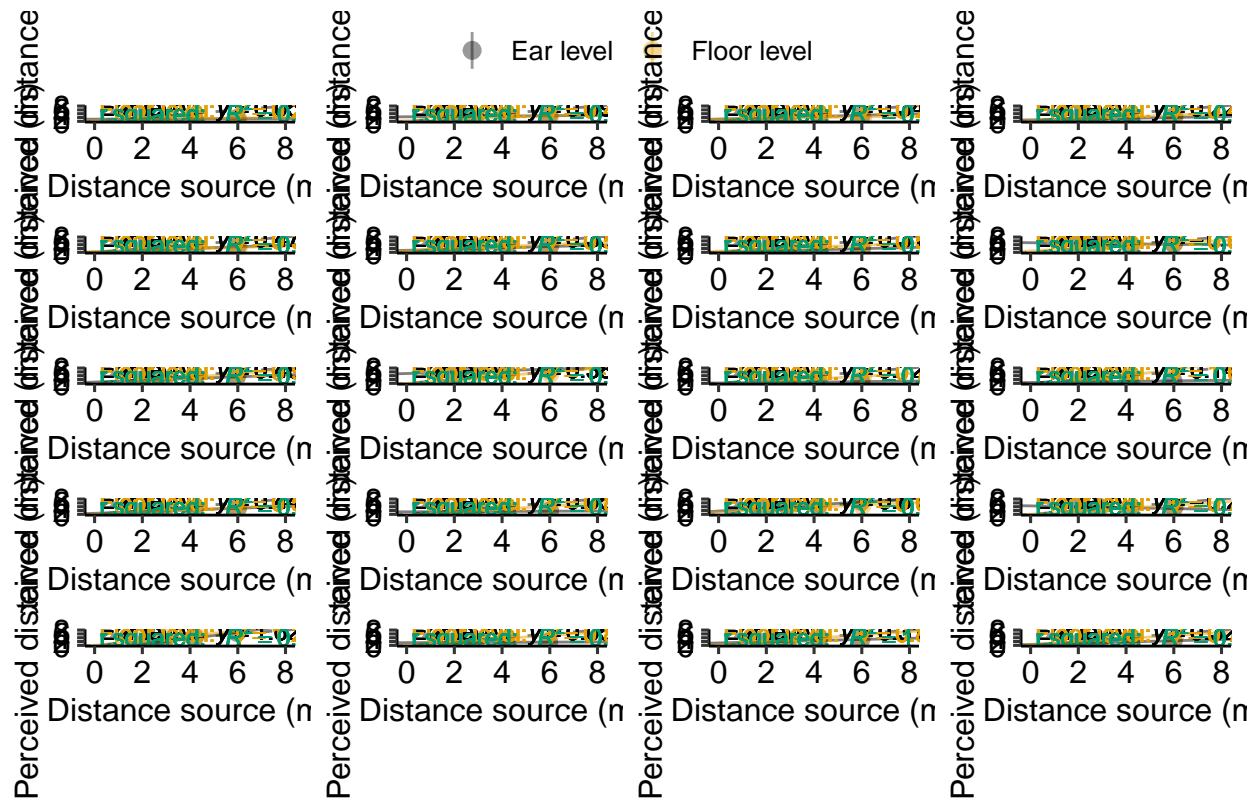
```
## # A tibble: 1 x 3
##   subject condition  mBiasUnsigned
##   <fct>   <fct>          <dbl>
## 1 S001   Floor level      0.933
```

Analysis perceived distance LINEAL

You can also embed plots, for example:

```
## [1] 1
## [1] "S002"
## [1] 2
## [1] "S004"
## [1] 3
## [1] "S005"
## [1] 4
## [1] "S006"
## [1] 5
## [1] "S007"
## [1] 6
## [1] "S008"
## [1] 7
## [1] "S009"
## [1] 8
## [1] "S010"
```

```
## [1] 9
## [1] "S011"
## [1] 10
## [1] "S012"
## [1] 11
## [1] "S013"
## [1] 12
## [1] "S014"
## [1] 13
## [1] "S015"
## [1] 14
## [1] "S016"
## [1] 15
## [1] "S017"
## [1] 16
## [1] "S018"
## [1] 17
## [1] "S019"
## [1] 18
## [1] "S020"
## [1] 19
## [1] "S021"
## [1] 20
## [1] "S022"
```

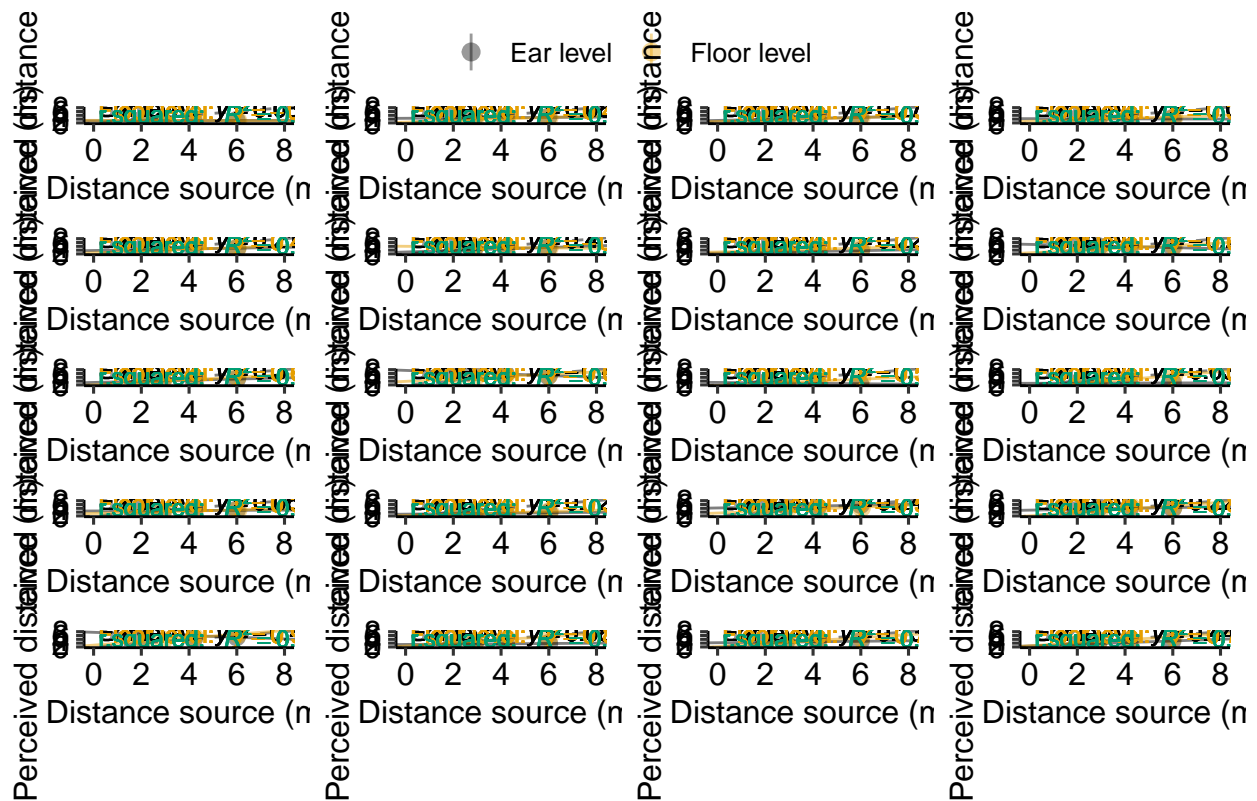


```
## [1] 1
```

```
## [1] "S002"
## [1] 2
## [1] "S004"
## [1] 3
## [1] "S005"
## [1] 4
## [1] "S006"
## [1] 5
## [1] "S007"
## [1] 6
## [1] "S008"
## [1] 7
## [1] "S009"
## [1] 8
## [1] "S010"
## [1] 9
## [1] "S011"
## [1] 10
## [1] "S012"
## [1] 11
## [1] "S013"
## [1] 12
## [1] "S014"
## [1] 13
## [1] "S015"
## [1] 14
## [1] "S016"
## [1] 15
## [1] "S017"
## [1] 16
## [1] "S018"
## [1] 17
## [1] "S019"
## [1] 18
## [1] "S020"
## [1] 19
## [1] "S021"
## [1] 20
## [1] "S022"
```

```
## Warning: Removed 2 rows containing missing values (‘geom_segment()’).
```

```
## Warning: Removed 1 rows containing missing values (‘geom_pointrange()’).
```



Analysis perceived distance LOG

You can also embed plots, for example:

```
## [1] 1
## [1] "S002"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 2
## [1] "S004"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 3
## [1] "S005"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 4
## [1] "S006"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado
```

```

## [1] 5
## [1] "S007"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 6
## [1] "S008"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 7
## [1] "S009"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 8
## [1] "S010"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 9
## [1] "S011"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 10
## [1] "S012"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 11
## [1] "S013"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 12
## [1] "S014"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 13
## [1] "S015"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 14
## [1] "S016"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

```

```

## [1] 15
## [1] "S017"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 16
## [1] "S018"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 17
## [1] "S019"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 18
## [1] "S020"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 19
## [1] "S021"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 20
## [1] "S022"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## Warning: Removed 22 rows containing missing values ('geom_line()').

## Warning: Removed 200 rows containing missing values ('geom_line()').

## Warning: Removed 170 rows containing missing values ('geom_line()').

## Warning: Removed 352 rows containing missing values ('geom_line()').

## [1] 1
## [1] "S002"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 2
## [1] "S004"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

```



```

## [1] 3
## [1] "S005"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 4
## [1] "S006"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 5
## [1] "S007"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 6
## [1] "S008"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 7
## [1] "S009"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 8
## [1] "S010"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 9
## [1] "S011"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 10
## [1] "S012"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 11
## [1] "S013"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 12
## [1] "S014"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

```

```

## [1] 13
## [1] "S015"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 14
## [1] "S016"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 15
## [1] "S017"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 16
## [1] "S018"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 17
## [1] "S019"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 18
## [1] "S020"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 19
## [1] "S021"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## [1] 20
## [1] "S022"

## Warning in rm("earlevel", "floorlevel"): objeto 'floorlevel' no encontrado

## Warning: Removed 2 rows containing missing values ('geom_segment()').

## Warning: Removed 29 rows containing missing values ('geom_line()').

## Warning: Removed 34 rows containing missing values ('geom_line()').

## Warning: Removed 1 rows containing missing values ('geom_pointrange()').

## Warning: Removed 33 rows containing missing values ('geom_line()').

```

Analysis perceived distance MEAN (LMEM)

You can also embed plots, for example:

```
## boundary (singular) fit: see help('isSingular')

## Warning: Log-likelihood is corrected for models with transformed response.
##   However, this ignores 'REML=TRUE'. Log-likelihood value is probably
##   inaccurate.

## Warning: Log-likelihood is corrected for models with transformed response.
##   However, this ignores 'REML=TRUE'. Log-likelihood value is probably
##   inaccurate.

## Random effect variances not available. Returned R2 does not account for random effects.

## Number of labels is greater than default palette color count.
## * Select another color 'palette' (and/or 'package').

## $subtitle_data
## NULL
##
## $caption_data
## NULL
##
## $pairwise_comparisons_data
## NULL
##
## $descriptive_data
## NULL
##
## $one_sample_data
## NULL
##
## $tidy_data
## # A tibble: 8 x 13
##   term                                estimate std.error conf.level
##   <fct>                                <dbl>     <dbl>     <dbl>
## 1 (Intercept)                        0.0311    0.0679     0.95
## 2 log10(target_distance)             0.508     0.0988     0.95
## 3 conditionFloor level              -0.188     0.0794     0.95
## 4 log10(target_distance):conditionFloor level  0.502     0.139     0.95
## 5 SD (Intercept)                     0.171     NA         0.95
## 6 SD (log10(target_distance))         0.0297     NA         0.95
## 7 Cor (Intercept-log10(target_distance)) -1         NA         0.95
## 8 SD (Observations)                  0.157     NA         0.95
##   conf.low conf.high statistic df.error    p.value effect group
##   <dbl>     <dbl>     <dbl>    <int>    <dbl>  <chr>  <chr>
## 1  -0.103    0.165     0.457    152  0.648   fixed  ""
## 2   0.313    0.703     5.14     152 0.000000815 fixed  ""
## 3  -0.345   -0.0311   -2.37     152 0.0192   fixed  ""
## 4   0.226    0.777     3.60     152 0.000433   fixed  ""
## 5    NA      NA        NA        NA NA      random "subject"
```

```
## 6 NA NA NA NA NA random "subject"
## 7 NA NA NA NA NA random "subject"
## 8 NA NA NA NA NA random "Residual"
## conf.method expression
## <chr> <list>
## 1 residual <language>
## 2 residual <language>
## 3 residual <language>
## 4 residual <language>
## 5 residual <NULL>
## 6 residual <NULL>
## 7 residual <NULL>
## 8 residual <NULL>
##
## $glance_data
## # A tibble: 1 x 8
## AIC AICc BIC R2_conditional R2_marginal RMSE Sigma expression
## <dbl> <dbl> <dbl> <lgl> <dbl> <dbl> <dbl> <list>
## 1 456. 457. 481. NA 0.473 0.146 0.157 <expression>

## Warning: 'r.squaredGLMM' now calculates a revised statistic. See the help page.

## R2m R2c
## [1,] 0.3127615 0.6519393

## Type III Analysis of Variance Table with Satterthwaite's method
## Sum Sq Mean Sq NumDF DenDF F value
## log10(target_distance) 2.89510 2.89510 1 121.85 117.5434
## condition 0.13799 0.13799 1 137.00 5.6027
## log10(target_distance):condition 0.31892 0.31892 1 137.00 12.9484
## Pr(>F)
## log10(target_distance) < 2.2e-16 ***
## condition 0.0193320 *
## log10(target_distance):condition 0.0004463 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

## Warning: fonts used in 'flextable' are ignored because the 'pdflatex' engine is
## used and not 'xelatex' or 'lualatex'. You can avoid this warning by using the
## 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a compatible engine
## by defining 'latex_engine: xelatex' in the YAML header of the R Markdown
## document.
```

<i>Predictors</i>	<i>NumDF</i>	<i>DenDF</i>	<i>F.value</i>	<i>Pr..F.</i>
Target distance	1	121.8	117.5	<0.001
Condition	1	137.0	5.6	0.019
Target distance:Condition	1	137.0	12.9	<0.001

Perceived distance

Predictors	Estimates	CI 95%	Statistic	p.value
Intercept	0.03	-0.10 – 0.17	0.46	0.648
Target distance	0.51	0.31 – 0.70	5.14	<0.001
Condition (Floor level)	-0.19	-0.34 – -0.03	-2.37	0.019
Target distance * Condition (Floor level)	0.50	0.23 – 0.78	3.60	<0.001
N subject	20			
Observations	160			
Marginal R2 / Conditional R2	0.473 / NA			

```
## Warning: Log-likelihood is corrected for models with transformed response.
##   However, this ignores 'REML=TRUE'. Log-likelihood value is probably
##   inaccurate.
```

```
## Warning: Log-likelihood is corrected for models with transformed response.
##   However, this ignores 'REML=TRUE'. Log-likelihood value is probably
##   inaccurate.
```

```

## Number of labels is greater than default palette color count.
## * Select another color 'palette' (and/or 'package').

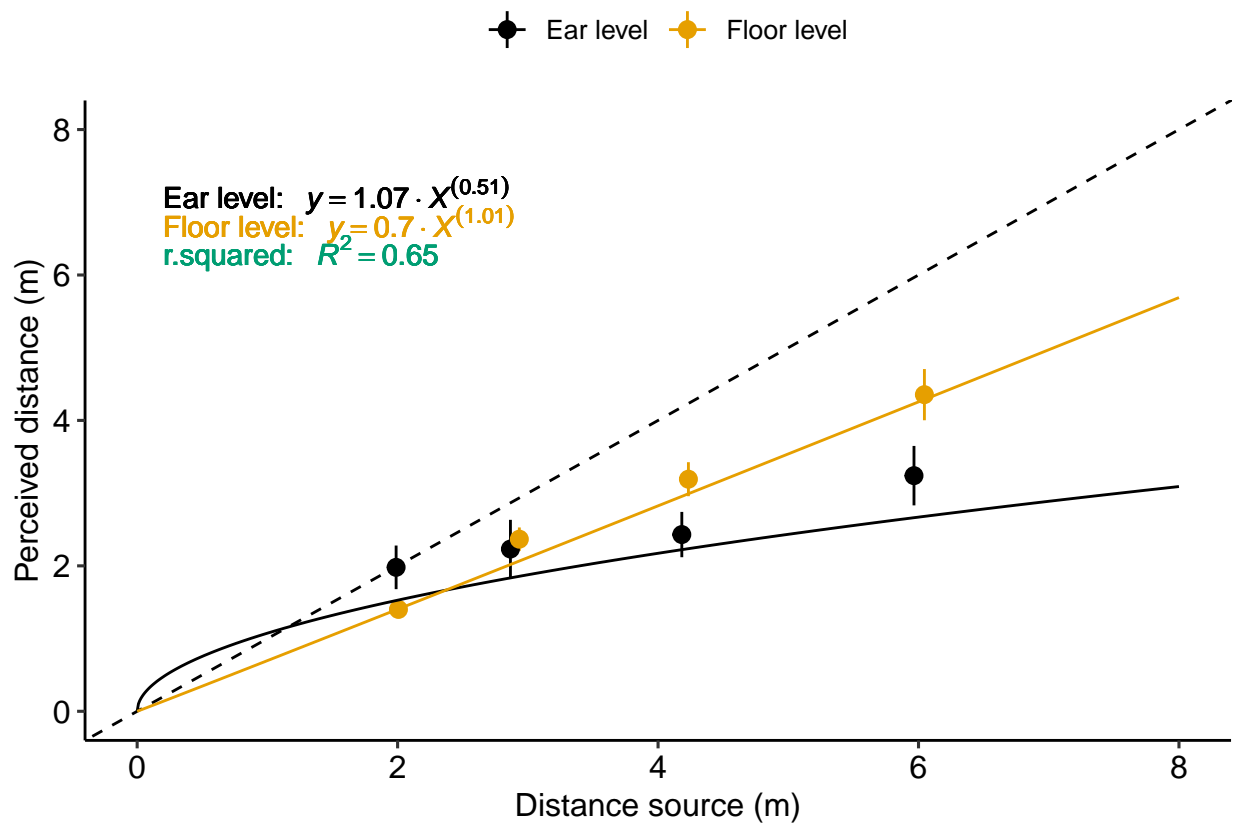
## $subtitle_data
## NULL
##
## $caption_data
## NULL
##
## $pairwise_comparisons_data
## NULL
##
## $descriptive_data
## NULL
##
## $one_sample_data
## NULL
##
## $tidy_data
## # A tibble: 8 x 13
##   term                                estimate std.error conf.level
##   <fct>                                <dbl>     <dbl>     <dbl>
## 1 (Intercept)                        0.0311    0.0677     0.95
## 2 log10(target_distance)             0.508     0.0990     0.95
## 3 conditionFloor level              -0.188     0.0796     0.95
## 4 log10(target_distance):conditionFloor level 0.502     0.140     0.95
## 5 SD (Intercept)                     0.166     NA         0.95
## 6 SD (log10(target_distance))         0.0289     NA         0.95
## 7 Cor (Intercept~log10(target_distance)) -1         NA         0.95
## 8 SD (Observations)                  0.155     NA         0.95
##   conf.low conf.high statistic df.error    p.value effect group
##   <dbl>     <dbl>     <dbl>    <dbl>    <dbl> <chr>  <chr>
## 1  -0.101    0.163     0.459     137  0.647   fixed  ""
## 2   0.315    0.701     5.14      137 0.000000946 fixed  ""
## 3  -0.343   -0.0326   -2.36      137 0.0196   fixed  ""
## 4   0.229    0.774     3.59      137 0.000457   fixed  ""
## 5   NA       NA        NA         NA NA      random "subject"
## 6   NA       NA        NA         NA NA      random "subject"
## 7   NA       NA        NA         NA NA      random "subject"
## 8   NA       NA        NA         NA NA      random "Residual"
##   conf.method expression
##   <chr>         <list>
## 1 residual    <language>
## 2 residual    <language>
## 3 residual    <language>
## 4 residual    <language>
## 5 residual    <NULL>
## 6 residual    <NULL>
## 7 residual    <NULL>
## 8 residual    <NULL>
##
## $glance_data
## # A tibble: 1 x 9
##   AIC AICc BIC R2_conditional R2_marginal ICC RMSE Sigma expression

```

```
##      <dbl> <dbl> <dbl>          <dbl>      <dbl> <dbl> <dbl> <dbl> <list>
## 1  456.  457.  481.          0.650      0.321 0.485 0.146 0.155 <expression>

##                                numDF denDF   F-value p-value
## (Intercept)                   1    137 111.75153 <.0001
## log10(target_distance)         1    137 117.14738 <.0001
## condition                     1    137  11.27649 1e-03
## log10(target_distance):condition 1    137  12.90103 5e-04

## 'summarise()' has grouped output by 'target_distance'. You can override using
## the '.groups' argument.
```



```
## boundary (singular) fit: see help('isSingular')

## Warning: Log-likelihood is corrected for models with transformed response.
## However, this ignores 'REML=TRUE'. Log-likelihood value is probably
## inaccurate.

## Warning: Log-likelihood is corrected for models with transformed response.
## However, this ignores 'REML=TRUE'. Log-likelihood value is probably
## inaccurate.

## Number of labels is greater than default palette color count.
## * Select another color 'palette' (and/or 'package').
```

```

## $subtitle_data
## NULL
##
## $caption_data
## NULL
##
## $pairwise_comparisons_data
## NULL
##
## $descriptive_data
## NULL
##
## $one_sample_data
## NULL
##
## $tidy_data
## # A tibble: 8 x 13
##   term                                estimate std.error conf.level
##   <fct>                                <dbl>     <dbl>     <dbl>
## 1 (Intercept)                        0.265     0.0636     0.95
## 2 log10(target_distance)             0.180     0.0833     0.95
## 3 conditionFloor level               -0.292     0.0670     0.95
## 4 log10(target_distance):conditionFloor level 0.592     0.118     0.95
## 5 SD (Intercept)                     0.190     NA         0.95
## 6 SD (log10(target_distance))         0.0213    NA         0.95
## 7 Cor (Intercept~log10(target_distance)) -1.00     NA         0.95
## 8 SD (Observations)                  0.132     NA         0.95
##   conf.low conf.high statistic df.error    p.value effect group
##   <dbl>     <dbl>     <dbl>    <int>    <dbl> <chr>  <chr>
## 1  0.139     0.390     4.16     152 0.0000531 fixed  ""
## 2  0.0154    0.345     2.16     152 0.0323    fixed  ""
## 3 -0.425    -0.160    -4.36     152 0.0000236 fixed  ""
## 4  0.360     0.824     5.03     152 0.00000135 fixed  ""
## 5 NA         NA         NA         NA NA         random "subject"
## 6 NA         NA         NA         NA NA         random "subject"
## 7 NA         NA         NA         NA NA         random "subject"
## 8 NA         NA         NA         NA NA         random "Residual"
##   conf.method expression
##   <chr>      <list>
## 1 residual  <language>
## 2 residual  <language>
## 3 residual  <language>
## 4 residual  <language>
## 5 residual  <NULL>
## 6 residual  <NULL>
## 7 residual  <NULL>
## 8 residual  <NULL>
##
## $glance_data
## # A tibble: 1 x 9
##   AIC AICc BIC R2_conditional R2_marginal ICC RMSE Sigma expression
##   <dbl> <dbl> <dbl>         <dbl>         <dbl> <dbl> <dbl> <dbl> <list>
## 1  435.  436.  459.         0.706         0.171 0.645 0.123 0.132 <expression>

```



```
##           R2m           R2c
## [1,] 0.1714173 0.7057449

## Type III Analysis of Variance Table with Satterthwaite's method
##               Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## log10(target_distance)      1.14133  1.14133      1 126.3  65.079 4.790e-13
## condition                    0.33375  0.33375      1 137.0  19.030 2.512e-05
## log10(target_distance):condition 0.44419  0.44419      1 137.0  25.328 1.493e-06
##
## log10(target_distance)      ***
## condition                    ***
## log10(target_distance):condition ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

## Warning: fonts used in 'flextable' are ignored because the 'pdflatex' engine is
## used and not 'xelatex' or 'lualatex'. You can avoid this warning by using the
## 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a compatible engine
## by defining 'latex_engine: xelatex' in the YAML header of the R Markdown
## document.
```

<i>Predictors</i>	<i>NumDF</i>	<i>DenDF</i>	<i>F.value</i>	<i>Pr..F.</i>
Target distance	1	126.3	65.1	<0.001
Condition	1	137.0	19.0	<0.001
Target distance:Condition	1	137.0	25.3	<0.001

Perceived distance

Predictors

Estimates

CI 95%

Statistic

p.value

Intercept

0.26

0.14 – 0.39

4.16

<0.001

Target distance

0.18

0.02 – 0.34

2.16

0.032

Condition (Floor level)

-0.29

-0.42 – -0.16

-4.36

<0.001

Target distance * Condition (Floor level)

0.59

0.36 – 0.82

5.03

<0.001

ICC

0.64

N subject

20

Observations

160

Marginal R2 / Conditional R2

0.171 / 0.706

```
## Warning: Log-likelihood is corrected for models with transformed response.  
##   However, this ignores 'REML=TRUE'. Log-likelihood value is probably  
##   inaccurate.
```

```
## Warning: Log-likelihood is corrected for models with transformed response.  
##   However, this ignores 'REML=TRUE'. Log-likelihood value is probably  
##   inaccurate.
```

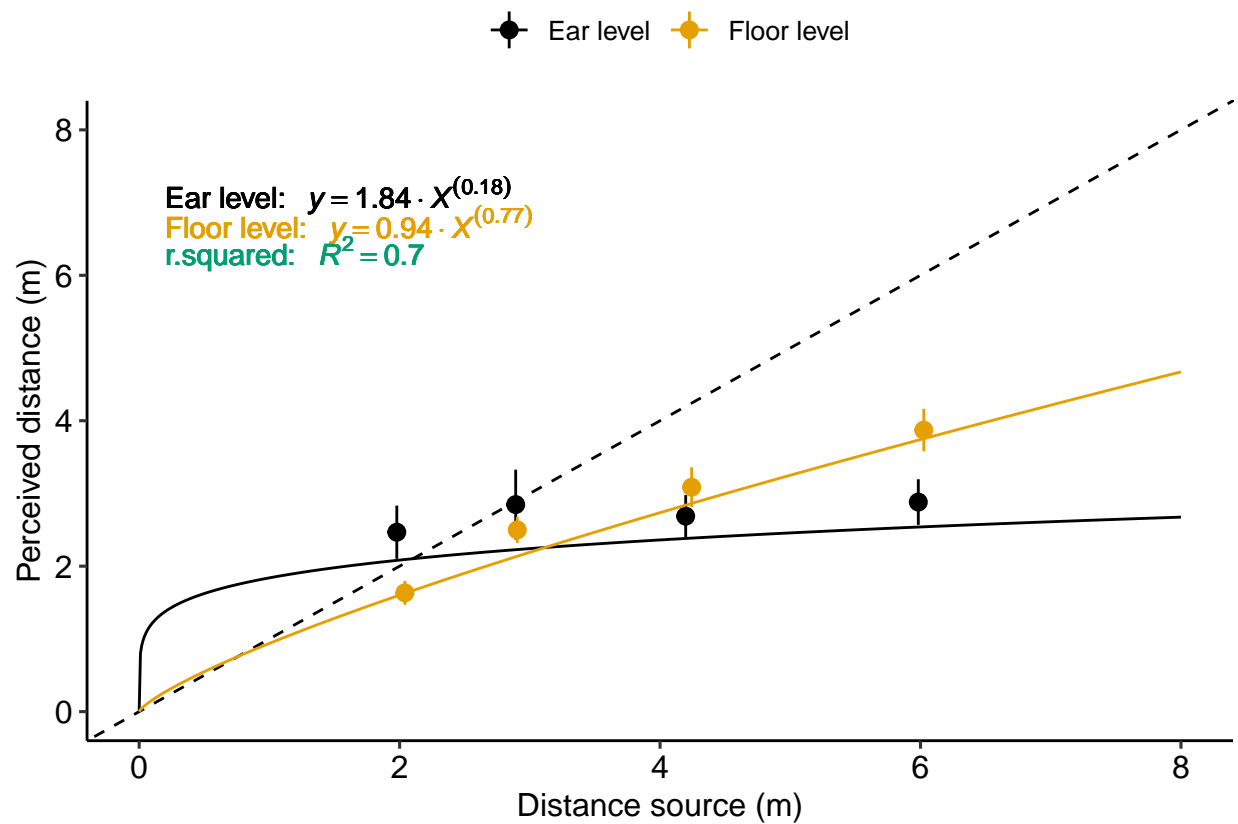
```
## Number of labels is greater than default palette color count.  
## * Select another color 'palette' (and/or 'package').
```

```
## $subtitle_data  
## NULL  
##  
## $caption_data  
## NULL  
##  
## $pairwise_comparisons_data  
## NULL  
##  
## $descriptive_data  
## NULL  
##  
## $one_sample_data  
## NULL  
##
```

```
## $tidy_data
## # A tibble: 8 x 13
##   term                                estimate std.error conf.level
##   <fct>                                <dbl>      <dbl>      <dbl>
## 1 (Intercept)                        0.265      0.0633      0.95
## 2 log10(target_distance)             0.180      0.0835      0.95
## 3 conditionFloor level               -0.292      0.0671      0.95
## 4 log10(target_distance):conditionFloor level 0.592      0.118      0.95
## 5 SD (Intercept)                     0.185      NA          0.95
## 6 SD (log10(target_distance))         0.0207     NA          0.95
## 7 Cor (Intercept~log10(target_distance)) -1         NA          0.95
## 8 SD (Observations)                  0.131      NA          0.95
##   conf.low conf.high statistic df.error    p.value effect group
##   <dbl>    <dbl>    <dbl>    <dbl>    <dbl> <chr> <chr>
## 1  0.141    0.388     4.18     137 0.0000514 fixed ""
## 2  0.0171   0.343     2.16     137 0.0328    fixed ""
## 3 -0.423   -0.161    -4.35     137 0.0000259 fixed ""
## 4  0.362    0.822     5.02     137 0.00000155 fixed ""
## 5 NA        NA        NA        NA NA        random "subject"
## 6 NA        NA        NA        NA NA        random "subject"
## 7 NA        NA        NA        NA NA        random "subject"
## 8 NA        NA        NA        NA NA        random "Residual"
##   conf.method expression
##   <chr>      <list>
## 1 residual  <language>
## 2 residual  <language>
## 3 residual  <language>
## 4 residual  <language>
## 5 residual  <NULL>
## 6 residual  <NULL>
## 7 residual  <NULL>
## 8 residual  <NULL>
##
## $glance_data
## # A tibble: 1 x 9
##   AIC AICc BIC R2_conditional R2_marginal ICC RMSE Sigma expression
##   <dbl> <dbl> <dbl>          <dbl>          <dbl> <dbl> <dbl> <dbl> <list>
## 1  435.  436.  459.          0.702          0.177 0.638 0.123 0.131 <expression>

##                                numDF denDF F-value p-value
## (Intercept)                    1   137 97.71503 <.0001
## log10(target_distance)          1   137 64.85393 <.0001
## condition                       1   137  1.78576 0.1837
## log10(target_distance):condition 1   137 25.23540 <.0001

## 'summarise()' has grouped output by 'target_distance'. You can override using
## the '.groups' argument.
```



Analysis outliers

You can also embed plots, for example:

Analysis outliers

You can also embed plots, for example:

Analysis outliers

You can also embed plots, for example:

Analysis outliers

You can also embed plots, for example:

Analysis outliers

You can also embed plots, for example:

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.