PragmaP600 annotations

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This file aims at aiding the digitalization of ERP papers on figurative language. A number of ERPs papers on figurative language processing are considered by looking at contrasts between figurative and literal/control condtitions. Papers often contain multiple experiments, please add an element array for each experiment, in this case the field expname becomes required.

Description of the annotation schema

Annotators can add further information they think require some attention by adding further fields. These extra fields should start with "note".

Basic elements

paperid *[type= string]*: paperid **(required)**

The id of the annotated paper, should be [last author family name][year of publication][first page].

Examples:

"KUTAS1984161"

expname *[type= string]*: Name of the experiment **(required)**

A label of the form exp[N], where N is an integer. We suggest to keep the original paper number, otherwise add a field "note on name".

content *[type= string]*: Experiment description **(required)**

A very brief description of the experiment aims.

phenomenon *[type= string]*: Pragmatic phenomenon **(required)**

What the experiment is about.

eeg *[type= object]*: EEG Section **(required)**

A collection of information about EEG recording and the analysis pipeline for ERPs extraction.

subjects *[type= array of object]*: Subject Groups Section **(required)**

An array with information about the groups of subjects tested.

procedure *[type= object]*: Experimental Procedure Section **(required)**

A collection of information about the experimental procedure, including stimuli and behavioural tasks.

data *[type= array of object]*: Data section **(required)**

An array of entries corresponding to plotted waveforms with information about where these can be found.

EEG section

An object with the following fields:

recording reference *[type= string]*: Recording reference **(required)**

The EEG site used for reference electrode during recording (typical value are left/right/linked mastoids, average, Cz).

analysis reference *[type= string]*: Analysis reference

Describe the analysis reference in the case a rereference was done, otherwise put -1.

sampling rate *[type= number]*: Sampling rate **(required)**

Samplig rate of the EEG recording in Hz (number of EEG points per second).

plot final low pass *[type= number]*: Plot Low Pass filter **(required)**

The cutoff frequency in Hz of the more severe low pass filter applied to the data prior to the plot (steepness is often not reported)

plot final high pass *[type= number]*: Plot High Pass filter **(required)**

The cutoff frequency in Hz of the more severe high pass filter applied to the data prior to the plot (steepness is often not reported)

epoch rejection *[type= string]*: Epoch rejection method **(required)**

A verbal description of the way the epoch rejection was performed: can be any of "manual", "automatic"or "semiautomatic" or it can be also a more in depth description including the specific parameters used in the procedure.

mean rejected *[type= number]*: Mean rejected

The proportion of trials removed by the artifact rejection procedure (for each condition, if available), should be a number between 0 and 1.

sites nomenclature *[type= string]*: Sites nomenclature **(required)**

A description of the standard used to label the channel/sites. In case of non standard sites put "custom" and add a filed "note on sites" with the original description of the position of the electrodes should be provided.

sites *[type= array of string]*: Recorded Sites **(required)**

An array of strings with the labels used in the paper figures of the recorded EEG sites/channels.

> **sites elements:** *[type= string]*: Channel/site label
>
> Label of the channel/site.

baseline *[type= string]*: Baseline **(required)**

The interval used for the baseline of the ERPs with reference to the onset of the critical word. It should in the form "MIN, MAX" in ms. In the case different baselines are used for different conditions or target words please add a field "note on baseline".

plotted epoch *[type= string]*: Plotted interval **(required)**

the plotted time range with reference to the onset of the critical word. It should in the form "MIN, MAX" in ms.

hardware *[type= string]*: Hardware

A description of the EEG system used (recording device and optionally recording software).

active electrodes *[type= boolean]*: Active electrodes

Active electrodes were used (true/false)

Subjects section

An array of objects with the following fields:

groupname *[type= string]*: A label for this group **(required)**

A short and possibly informative label of the group of subjects

n *[type= integer]*: Number of subjects **(required)**

An integer: the number of subject included in the final analysis. Put -1 if the information is not provided. If different subjects were used for different conditions or target words please add a field "note on n"

mean age *[type= number]*: Mean age

Mean age of this group of subject in years. Put -1 if not provided.

age range *[type= string]*: Age range

Age range in the form "MIN, MAX" in years, leave empty if not provided.

num of females *[type= integer]*: Number of females

The number of females in the sample, put -1 if the information is not provided.

language(s) spoken *[type= string]*: Language(s) spoken **(required)**

First language of the subjects and possible information about further other language known, when provided.

description *[type= string]*: Group Description **(required)**

Report information about the group, including info especially when participants are not all right-handed or about vision, hearing capability, cognitive and neurological state.

Procedure section

An object with the following fields:

language *[type= string]*: Language of the stimuli **(required)**

The language of the sentences or words presented to subjects during the experiment.

modality *[type= string]*: Presentation modality **(required)**

Modality of presentation of the stimuli.

Possible values: "auditory", "visual", "unknown"

typeofmanipulation *[type= string]*: Type of manipulation **(required)**

Choose which type of manipulation was carried out (same prefix, same target, different prefix and target)

Possible values: "seme prefix", "same target", "different prefix and target"

task *[type= string]*: Requested task **(required)**

The behavioral task which subjects were requested to perform.

Examples: "silent reading", "reading for comprhension", "comprehension questions", "word monitoring"

lists *[type= string]*: Lists

The number of different lists can also be reported.

counterbalancement *[type= string]*: Counterbalancement

A textual description of the type of counterbalancement of material across participants (e.g. latin square design, fully crossed, repetition).

word duration: Word duration

The time in ms for which the words were presented as a number. In case the duration was variable a textual description of duration estimates (e.g. mean minimum, maximum) can be provided.

woa: Word Onset Asyncrony

The time in ms that occured between the onset of a word and the onset of the following word (e.g. word duration plus interstimulus interval) as a number. In case it is variable provide a description string.

linguisticfeatures: Linguistic features

Additional variables measured on the target word (with values for each condition, following alphabetic order of conditions): e.g., cloze probability [0.08, 0.03] for cond 0 and cond 1

conditions *[type= array of object]*: Experimental Conditions **(required)**

An array with information about the tested experimental conditions.

> **conditions elements:** *[type= object]*: An Experimental Condition
>
> A collection of informations about a specific experimental condition.
>
> > **condname** *[type= string]*: Condition label **(required)**
> >
> > A possibly informative label of the experimental condition, taken from the plot.
> >
> > **items** *[type= number]*: Number of items **(required)**
> >
> > The numeber of items (words/sentences) which was presented in this condition to each subject. If it is variable add a "note on items" field.
> >
> > **description** *[type= string]*: Condition description **(required)**
> >
> > A textual description of this experimental condition.
> >
> > **example** *[type= string]*: Sentence example
> >
> > If available provide an example of the sentence used in this experiment and condition by placing the target word between asteriscs (e.g. "He spread the butter with a *sock*").
> >
> > **wp** *[type= string]*: Word Position
> >
> > A description of the word position in the sentence at which the ERPs were measured (e.g. "target", "post target", "end of sentence".
> >
> > **linear position** *[type= string]*: Linear Word Position
> >
> > Target word position in the sentence (in number of words from the beginning).

Data section

An array of objects with the following fields

condition *[type= string]*: Condition label **(required)**

A condition label instantiated above in the procedure section.

subjects *[type= string]*: Group label **(required)**

An subject-group label instantiated above in the subjects section.

time *[type= string]*: Time Range **(required)**

The (maximum) time range of the plotted data, should be in the form "MIN, MAX".

figure *[type= string]*: Figure label **(required)**

A short label for the figure from which the specific waveform should be extracted. Should be in the form "fig[N][A]", where N in an integer and A an optional letter (e.g. "fig1A"). This label should match both the description in the paper and the name of the image file to be used for the digitalization (e.g "fig1A.png".

page *[type= string]*: Page number

The number of the page in which the figure appears.

color *[type= string]*: Line color **(required)**

A verbal description of the color in which the waveform appears in the plot.

type *[type= string]*: Line type **(required)**

A verbal description of the graphic type of the line (e.g. continuous, dashed, dotted . . .).

List of papers to be digitalized

KWON20231: Kwon, S., M. D. Rugg, R. Wiegand, et al. (2023). "A meta-analysis of event-related potential correlates of recognition memory". In: *Psychonomic Bulletin & Review*, pp. 1-23.

CANAL2023583: Canal, P. and V. Bambini (2023). "Pragmatics Electrified". In: *Language Electrified: Principles, Methods, and Future Perspectives of Investigation*. Ed. by M. Grimaldi, E. Brattico and Y. Shtyrov. New York, NY: Springer US, pp. 583-612. ISBN: 978-1-0716-3263-5. DOI: 10.1007/978-1-0716-3263-5_18. <10.1007/978-1-0716-3263-5_18>.

VESPIGNANI2020G: Vespignani, F. (2020). *digERPs*. https://github.com/francesco-vespignani/digERPs.git.

CLAYSON2019e13437: Clayson, P. E., K. A. Carbine, S. A. Baldwin, et al. (2019). "Methodological reporting behavior, sample sizes, and statistical power in studies of event-related potentials: Barriers to reproducibility and replicability". In: *Psychophysiology* 56.11, p. e13437. DOI: 10.1111/psyp.13437. eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/psyp.13437. https://onlinelibrary.wiley.com/doi/abs/10.1111/psyp.13437.

COLL20181003: Coll, M. (2018). "Meta-analysis of ERP investigations of pain empathy underlines methodological issues in ERP research". In: *Social Cognitive and Affective Neuroscience* 13.10, pp. 1003-1017. ISSN: 1749-5016. DOI: 10.1093/scan/nsy072. eprint: https://academic.oup.com/scan/article-pdf/13/10/1003/26184809/nsy072.pdf. <10.1093/scan/nsy072>.

PYNTE1996293: Pynte, J., M. Besson, F. Robichon, et al. (1996). "The time-course of metaphor comprehension: An event-related potential study". In: *Brain and language* 55.3, pp. 293-316. DOI: 10.1006/brln.1996.0107.

BONNAUD2002258: Bonnaud, V., R. Gil, and P. Ingrand (2002). "Metaphorical and non-metaphorical links: a behavioral and ERP study in young and elderly adults". In: *Neurophysiologie Clinique/Clinical Neurophysiology* 32.4, pp. 258-268. DOI: 10.1016/S0987-7053(02)00307-6.

COULSON2002958: Coulson, S. and C. Van Petten (2002). "Conceptual integration and metaphor: An event-related potential study". In: *Memory & cognition* 30.6, pp. 958-968. DOI: 10.3758/BF03195780.

TARTTER2002488: Tartter, V. C., H. Gomes, B. Dubrovsky, et al. (2002). "Novel metaphors appear anomalous at least momentarily: Evidence from N400". In: *Brain and Language* 80.3, pp. 488-509. DOI: 10.1006/brln.2001.2610.

KAZMERSKI2003673: Kazmerski, V. A., D. G. Blasko, and B. G. Dessalegn (2003). "ERP and behavioral evidence of individual differences in metaphor comprehension". In: *Memory & cognition* 31.5, pp. 673-689. DOI: 10.3758/BF03196107.

SOTILLO20045: Sotillo, M., L. Carretié, J. A. Hinojosa, et al. (2004). "Neural activity associated with metaphor comprehension: spatial analysis". In: *Neuroscience letters* 373.1, pp. 5-9. DOI: 10.1016/j.neulet.2004.09.071.

IAKIMOVA2005380: Iakimova, G., C. Passerieux, J. Laurent, et al. (2005). "ERPs of metaphoric, literal, and incongruous semantic processing in schizophrenia". In: *Psychophysiology* 42.4, pp. 380-390. DOI: 10.1111/j.1469-8986.2005.00303.x.

ARZOUAN200769: Arzouan, Y., A. Goldstein, and M. Faust (2007). "Brainwaves are stethoscopes: ERP correlates of novel metaphor comprehension". In: *Brain research* 1160, pp. 69-81. DOI: 10.1016/j.brainres.2007.05.034.

ARZOUAN2007222: Arzouan, Y., A. Goldstein, and M. Faust (2007). "Dynamics of hemispheric activity during metaphor comprehension: Electrophysiological measures". In: *Neuroimage* 36.1, pp. 222-231. DOI: 10.1016/j.neuroimage.2007.02.015.

COULSON2007128: Coulson, S. and C. Van Petten (2007). "A special role for the right hemisphere in metaphor comprehension?: ERP evidence from hemifield presentation". In: *Brain research* 1146, pp. 128-145. DOI: 10.1016/j.brainres.2007.03.008.

LAI2009145: Lai, V. T., T. Curran, and L. Menn (2009). "Comprehending conventional and novel metaphors: An ERP study". In: *Brain research* 1284, pp. 145-155. DOI: 10.1016/j.brainres.2009.05.088.

BALCONI20103246: Balconi, M. and S. Amenta (2010). ""A fighter is a lion". Neuropsychological indexes in comprehending frozen metaphors". In: *Journal of pragmatics* 42.12, pp. 3246-3257. DOI: 10.1016/j.pragma.2010.06.016.

DEGRAUWE20101965: De Grauwe, S., A. Swain, P. J. Holcomb, et al. (2010). "Electro-physiological insights into the processing of nominal metaphors". In: *Neuropsychologia* 48.7, pp. 1965-1984. DOI: 10.1016/j.neuropsychologia.2010.03.017.

GOLD2010124: Gold, R., M. Faust, and A. Goldstein (2010). "Semantic integration during metaphor comprehension in Asperger syndrome". In: *Brain and Language* 113.3, pp. 124-134. DOI: 10.1016/j.bandl.2010.03.002.

DAVENPORT201170: Davenport, T. and S. Coulson (2011). "Predictability and novelty in literal language comprehension: an ERP study". In: *Brain research* 1418, pp. 70-82. DOI: 10.1016/j.brainres.2011.07.039.

GOLDSTEIN2012137: Goldstein, A., Y. Arzouan, and M. Faust (2012). "Killing a novel metaphor and reviving a dead one: ERP correlates of metaphor conventionalization". In: *Brain and language* 123.2, pp. 137-142. DOI: 10.1016/j.bandl.2012.09.008.

LU20121730: Lu, A. and J. X. Zhang (2012). "Event-related potential evidence for the early activation of literal meaning during comprehension of conventional lexical metaphors". In: *Neuropsychologia* 50.8, pp. 1730-1738. DOI: 10.1016/j.neuropsychologia.2012.03.027.

LAI2013484: Lai, V. T. and T. Curran (2013). "ERP evidence for conceptual mappings and comparison processes during the comprehension of conventional and novel metaphors". In: *Brain and Language* 127.3, pp. 484-496. DOI: 10.1016/j.bandl.2013.09.010.

YANG2013312: Yang, F. G., K. Bradley, M. Huq, et al. (2013). "Contextual effects on conceptual blending in metaphors: An event-related potential study". In: *Journal of Neurolinguistics* 26.2, pp. 312-326. DOI: 10.1016/j.jneuroling.2012.10.004.

SCHNEIDER201445: Schneider, S., A. M. Rapp, F. B. Haeußinger, et al. (2014). "Beyond the N400: Complementary access to early neural correlates of novel metaphor comprehension using combined electrophysiological and haemodynamic measurements". In: *Cortex* 53, pp. 45-59. DOI: 10.1016/j.cortex.2014.01.008.

WEILAND2014583: Weiland, H., V. Bambini, and P. B. Schumacher (2014). "The role of literal meaning in figurative language comprehension: Evidence from masked priming ERP". In: *Frontiers in Human Neuroscience* 8, p. 583. DOI: 10.3389/fnhum.2014.00583.

FORGACS201528: Forgács, B., M. D. Bardolph, B. D. Amsel, et al. (2015). "Metaphors are physical and abstract: ERPs to metaphorically modified nouns resemble ERPs to abstract language". In: *Frontiers in human neuroscience* 9, p. 28. DOI: 10.3389/fnhum.2015.00028.

SCHMIDT-SNOEK2015126: Schmidt-Snoek, G. L., A. R. Drew, E. C. Barile, et al. (2015). "Auditory and motion metaphors have different scalp distributions: an ERP study". In: *Frontiers in human neuroscience* 9, p. 126. DOI: 10.3389/fnhum.2015.00126.

SHEN2015615: Shen, Z., Y. Tsai, and C. Lee (2015). "Joint influence of metaphor familiarity and mental imagery ability on action metaphor comprehension: An event-related potential study". In: *Language and Linguistics* 16.4, pp. 615-637. DOI: 10.1177/1606822X15583241.

BAMBINI2016559: Bambini, V., C. Bertini, W. Schaeken, et al. (2016). "Disentangling metaphor from context: an ERP study". In: *Frontiers in psychology* 7, p. 559. DOI: 10.3389/fpsyg.2016.00559.

FONDEVILA2016972: Fondevila, S., S. Aristei, W. Sommer, et al. (2016). "Counterintuitive Religious Ideas and Metaphoric Thinking: An Event-Related Brain Potential Study". In: *Cognitive science* 40.4, pp. 972-991. DOI: 10.1111/cogs.12263.

TANG201733: Tang, X., S. Qi, B. Wang, et al. (2017). "The temporal dynamics underlying the comprehension of scientific metaphors and poetic metaphors". In: *Brain research* 1655, pp. 33-40. DOI: 10.1016/j.brainres.2016.11.005.

RATAJ20181941: Rataj, K., D. S. Nazareth, and F. Van Der Velde (2018). "Use a spoon as a spade?: Changes in the upper and lower alpha bands in evaluating alternate object use". In: *Frontiers in psychology* 9, p. 1941. DOI: 10.3389/fpsyg.2018.01941.

RATAJ2018231: Rataj, K., A. Przekoracka-Krawczyk, and R. H. Van der Lubbe (2018). "On understanding creative language: the late positive complex and novel metaphor comprehension". In: *Brain research* 1678, pp. 231-244. DOI: 10.1016/j.brainres.2017.10.030.

BAMBINI201977: Bambini, V., P. Canal, D. Resta, et al. (2019). "Time course and neurophysiological underpinnings of metaphor in literary context". In: *Discourse Processes* 56.1, pp. 77-97. DOI: 10.1080/0163853X.2017.1401876.

LIU201957: Liu, W., J. Ding, L. Li, et al. (2019). "Metaphorical meaning learning in contexts: An event-related potential study". In: *Journal of Neurolinguistics* 49, pp. 57-70. DOI: 10.1016/j.jneuroling.2018.08.004.

JANKOWIAK201712: Jankowiak, K., K. Rataj, and R. Naskręcki (2017). "To electrify bilingualism: Electrophysiological insights into bilingual metaphor comprehension". In: *PloS one* 12.4. DOI: 10.1371/journal.pone.0175578.

OBERT201859: Obert, A., F. Gierski, and S. Caillies (2018). "He catapulted his words from the dais: An ERP investigation of novel verbal metaphors". In: *Journal of Neurolinguistics* 47, pp. 59-70. DOI: 10.1016/j.jneuroling.2018.02.008.

LAI2019202: Lai, V. T., O. Howerton, and R. H. Desai (2019). "Concrete processing of action metaphors: Evidence from ERP". In: *Brain research* 1714, pp. 202-209. DOI: 10.1016/j.brainres.2019.03.005.