Explanatory notes for archived data files:

Experiment 1.

In this experiment, 40 participants watched 60 scenarios involving videos of two animated characters. One character was the 'quizmaster' and the other a quiz contestant. The contestant would answer a series of multiple choice questions posed by the quizmaster. Based on whether the contestant answered correctly or incorrectly, they would receive either criticism or praise from the quizmaster for their response, which could be delivered either literally, or ironically. Thus the experiment consisted of a 2 literality (literal vs. ironic) x 2 valence (criticism vs. praise) within-subjects design. The participant's task was to rate each comment in terms of a) "How do you think the recipient of the comment would feel in response to the feedback given?" (on a scale from 1 = very negative to 7 = very positive), b) "How do you think the speaker intended the recipient of the comment to feel?" (on a scale from 1 = very negative to 7 = very positive), and c) "How humorous do you think the speaker intended to be?" (on a scale from 1 = not very to 7 = very).

In the archived datafile (titled "Experiment 1") Column A indicates the participant number (from 1 to 40), Column B indicates whether the comment was intended literally or ironically, and Column C indicates whether it was intended as criticism or praise. Columns H to K contain the rating data from questions a) to c) that are outlined above.

Experiment 2a.

In this experiment, 192 participants read 48 materials, each consisting of a context sentence followed by a description of one character sending a text message (or Facebook message) to the other character. The correct interpretation of the comment could be either literal, or sarcastic, and could be intended either as criticism, or praise, depending on the context. The comment could either be followed by an emoticon/punctuation, or by no

emoticon/punctuation, with the type of device being a between-subjects factor. Thus the experiment consisted of a 2 literality (literal vs. sarcastic) x 2 valence (criticism vs. praise) x 2 device presence (device vs. no device) x 4 device type (wink face ;-) vs. tongue face :-P vs. ellipsis vs. exclamation mark) mixed design. All factors were within-items; literality, valence, and device presence were within-subjects, and device type was between-subjects. There were eight versions of the questionnaire such that each participant saw each item in only one of eight conditions (and saw only one type of device). An example item is as follows:

Ironic criticism (with device): Tanya had noticed that Jenny had put on a lot of weight. She texted her to say: "I see the diet is going well [:-p / ;-) /…/!]"

Ironic criticism (no device): Tanya had noticed that Jenny had put on a lot of weight. She texted her to say: "I see the diet is going well"

Literal criticism (with device): Tanya had noticed that Jenny had put on a lot of weight. She texted her to say: "I see the diet is going badly [:-p / ;-) /…/!]"

Literal criticism (no device): Tanya had noticed that Jenny had put on a lot of weight. She texted her to say: "I see the diet is going badly"

Ironic praise (with device): Tanya had noticed that Jenny had lost a lot of weight. She texted her to say: "I see the diet is going badly [:-p / ;-) /…/!]"

Ironic praise (no device): Tanya had noticed that Jenny had lost a lot of weight. She texted her to say: "I see the diet is going badly"

Literal praise (with device): Tanya had noticed that Jenny had lost a lot of weight. She texted her to say: "I see the diet is going well [:-p / ;-) /…/!]"

Literal praise (no device): Tanya had noticed that Jenny had lost a lot of weight. She texted her to say: "I see the diet is going well"

Participants were asked to rate each item that they read along the following dimensions:

a) *How ironic do you think the final comment is?*

Not at all ironic 1 2 3 4 5 6 7 8 Very ironic

b) *How confident are you that you have interpreted the comment correctly?*

Not at all confident 1 2 3 4 5 6 7 8 Very confident

c) *How do you think the recipient of the comment would feel?*

Very negative 1 2 3 4 5 6 7 8 Very positive

d) *How do you think the sender intends the recipient of the comment to feel?*

Very negative 1 2 3 4 5 6 7 8 Very positive

In the archived datafile (titled Experiment 2a) Column A indicates the participant number (from 1 to 144), Column B indicates which counterbalanced list the participant was assigned to (from 1 to 8), Column C indicates the item number (from 1 to 48), and Column D indicates the condition number (from 1 to 8). In addition, Column E indicates whether the comment was intended literally or ironically, Column F indicates whether it was intended as criticism or praise, and Column G indicates whether a textual device was present or absent. Columns H to K contain the rating data from questions a) to d) that are outlined above. Missing data is indicated by '999'. Column L indicates which device was present.

The results from this study are published as Experiment 1 in Filik, R., Turcan, A., Thompson, D., Harvey, N., Davies, H., & Turner, A. (in press). Sarcasm and emoticons: Comprehension and emotional impact. *Quarterly Journal of Experimental Psychology*.

Experiment 2b.

In this experiment, 47 participants read 160 materials, each consisting of a context sentence followed by a description of one character sending a text message (or Facebook message) to the other character. The correct interpretation of the comment could be either literal, or ironic, and could be intended either as criticism, or praise, depending on the context. The comment could either be followed by an emoticon, or by no emoticon. Thus the experiment consisted of a 2 literality (literal vs. ironic) x 2 valence (criticism vs. praise) x 2 emoticon presence (emoticon vs. full stop) within subjects design.

Ironic criticism (with emoticon): Susie texted Linda to say that she hadn't been to the gym at all that week. Linda texted her back to say: You're so motivated :p

Ironic criticism (with full stop): Susie texted Linda to say that she hadn't been to the gym at all that week. Linda texted her back to say: You're so motivated.

Literal criticism (with emoticon): Susie texted Linda to say that she hadn't been to the gym at all that week. Linda texted her back to say: You're so unmotivated :p

Literal criticism (with full stop): Susie texted Linda to say that she hadn't been to the gym at all that week. Linda texted her back to say: You're so unmotivated.

Ironic praise (with emoticon): Susie texted Linda to say that she had been to the gym every day that week. Linda texted her back to say: You're so unmotivated :p

Ironic praise (with full stop): Susie texted Linda to say that she had been to the gym every day that week. Linda texted her back to say: You're so unmotivated.

Literal praise (with emoticon): Susie texted Linda to say that she had been to the gym every day that week. Linda texted her back to say: You're so motivated :p

Literal praise (with full stop): Susie texted Linda to say that she had been to the gym every day that week. Linda texted her back to say: You're so motivated.

Participants read the materials at their own pace and pressed the space bar when they had finished reading. The final sentence was then presented automatically, word-by-word, with each word displayed for 400 ms at the centre of the screen. This allowed analysis of the psychophysiological recordings to be time-locked to the onset of the final, disambiguating word. The full stop or emoticon appeared in conjunction with the final word. For the recoding of electrodermal activity (EDA), two flat Nihon Kohden Ag/AgCl electrodes (contact area diameter: 8 mm) were placed at the distal phalanges of the index and the middle fingers of the non-dominant hand. For the recording of facial muscle activity in relation to smiling (zygomaticus) and frowning (corrugator) (both EMG recordings), pairs of Ag/AgCl electrodes (contact area diameter: 4 mm) were placed approximately 12 mm apart (centre-to-centre) over the two facial muscle regions of interest (left cheek and left eyebrow; cf. Fridlund & Cacioppo, 1986); that is, over the zygomaticus major (cheek) and corrugator supercilii (eyebrow).

In the archived datafiles (titled Experiment 2b) of EDA measures (averageSCR, maxSCR), Column A indicates the participant number (vpNum from 1 to 47), Column B (Emot) indicates whether a textual device was present or absent, Column C (CP) indicates whether the comment was intended as criticism or praise, Column D (SL) whether the comment was intended literally or ironically (sarcastically), and Column E indicates the dependent variable value.

In the archived datafiles (titled Experiment 2b) of EMG measures (corrugator, zygomaticus), Column A indicates the participant number (vpNum from 1 to 47), Column B (WindowNumber) indicates the time window of EMG measurement relative to the onset of the critical word, Column C (Emot) indicates whether a textual device was present or absent,

Column D (CP) indicates whether the comment was intended as criticism or praise, Column E (SL) whether the comment was intended literally or ironically (sarcastically), and Column F indicates the dependent variable value.

The results from this study are published in Thompson. D, Mackenzie, I. G., Leuthold, H., & Filik, R. (2016). Emotional responses to irony and emoticons in written language: Evidence from EDA and facial EMG. *Psychophysiology*, 53, 1054-1062.

Experiment 3a.

In this experiment, 28 participants read 32 materials whilst their eye movements were monitored. Each item consisted of three sentences. The first was a context sentence (e.g., *Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it.*), which was designed to set-up the subsequent comment to be interpreted as criticism. The criticism could be either delivered literally (e.g., *Ray said to him, "You're so weak."*), or ironically (e.g., *Ray said to him, "You're so strong."*). The target sentence described the emotional response elicited in the recipient of the comment (e.g., *Charlie felt that this was a very amusing thing to say.*), or that the protagonist had intended to elicit (e.g., *Ray had intended for this to be a very amusing thing to say.*). The emotional response described in the target sentence always related to humour, using a variety of expressions such as *amused*, *funny*, etc. Thus the experiment consisted of a 2 *type of criticism* (literal vs. ironic) x 2 *perspective* (victim vs. protagonist) design. Items were divided into four stimulus lists; each including one version of each item, with equal numbers of items in each of the four conditions. An example item is as follows:

Literal (victim perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Charlie felt that this was a very/ **amusing**, critical/ thing to say. post-critical/

Literal (protagonist perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Ray had intended for this to be a very/ **amusing**, critical/ thing to say. post-critical/

Ironic (victim perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Charlie felt that this was a very/ **amusing**, critical/ thing to say. post-critical/

Ironic (protagonist perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Ray had intended for this to be a very/ **amusing**, critical/ thing to say. post-critical/

The archived data file (titled Experiment 3a) contains eye movement data for the critical analysis regions outlined in the example above. In the file, Column A is the participant number (from 1 to 28), column B is the item number (from 1 to 32), and Column C is the condition number (from 1 to 4). In addition, Column D indicates whether the material was written from the perspective of the victim, or the protagonist, and Column E indicates whether the criticism was delivered literally, or ironically. Columns F to M contain the eye movement data. Specifically:

Column F contains first-pass reading times for the critical region.

Column G contains first-pass reading times for the post-critical region.

Column H indicates the first-pass regressions out for the critical region.

Column I indicates the first-pass regressions out for the post-critical region.

Column J contains regression path reading times for the critical region.

Column K contains regression path reading times for the post-critical region.

Column L contains second pass reading times for the critical region.

Column M contains second pass reading times for the post-critical region.

Experiment 3b.

In this experiment, 36 participants listened to 240 materials whilst their EEG was recorded. Each item consisted of three sentences. The first was a context sentence (e.g., *Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it.*), which was designed to set-up the subsequent comment to be interpreted as criticism. The criticism could be either delivered literally (e.g., *Ray said to him, "You're so weak."*), or sarcastically (e.g., *Ray said to him, "You're so strong."*). The target sentence described the emotional response elicited in the recipient of the comment (e.g., *Charlie found the comment to be very amusing.*), or that the protagonist had intended to elicit (e.g., *Ray had intended for Charlie to find the comment very amusing.*). The emotional response described in the target sentence always related to humour, using a variety of expressions such as *amused*, *funny*, etc. The sarcastic conditions could be either delivered in a neutral or sarcastic tone of voice, resulting in six experimental conditions (Literal-Natural Listener Perspective, Literal-Natural Speaker Perspective, Sarcasm-Natural Listener Perspective, Sarcasm-Sarcastic Listener Perspective, Sarcasm-Natural Speaker Perspective, Sarcasm-Sarcastic Speaker Perspective). An example item is as follows:

Sarcasm-Natural (listener perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Charlie found the comment to be very **amusing**.

Sarcasm-Sarcastic (listener perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Charlie found the comment to be very **amusing**.

Literal-Natural (listener perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Charlie found the comment to be very **amusing**.

Sarcasm-Natural (speaker perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Ray had intended for Charlie to find the comment very **amusing**.

Sarcasm-Sarcastic (speaker perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Ray had intended for Charlie to find the comment very **amusing**.

Literal-Natural (speaker perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Ray had intended for Charlie to find the comment very **amusing**.

The archived data file (titled Experiment3b_ERP) contains ERP data time locked to the critical word (e.g., amusing). In the file, Column A is the participant number (vpNum = 1 to 36), column B is the condition number (1 = Sarcasm-Natural Listener Perspective, 2 = Sarcasm-Sarcastic Listener Perspective, 3 = Literal-Natural Listener Perspective, 4 = Sarcasm-Natural Speaker Perspective, 5 = Sarcasm-Sarcastic Speaker Perspective, 6 = Literal-Natural Speaker Perspective), Column C is the window number (1 to 5), Column D and E indicate the start and end time of the mean ERP amplitude measurement time interval, and Columns F to BV indicate the electrode positions (FP1 to M2).

Experiment 4a.

In this experiment, 28 participants read 32 materials whilst their eye movements were monitored. Each item consisted of three sentences. The first was a context sentence (e.g., *Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it.*), which was designed to set-up the subsequent comment to be interpreted as criticism. The criticism could be either delivered literally (e.g., *Ray said to him, "You're so weak."*), or ironically (e.g., *Ray said to him, "You're so strong."*). The target sentence described the emotional response elicited in the recipient of the comment (e.g., *Charlie felt that this was a very mean thing to say.*), or that the protagonist had intended to elicit (e.g., *Ray had intended for this to be a very mean thing to say.*). The emotional response described in the target sentence always related to hurtfulness, using a variety of expressions such as *hurt, upset, wounded* etc. Thus the experiment consisted of a 2 *type of criticism* (literal vs. ironic) x 2 *perspective* (victim vs. protagonist) design. Items were divided into four stimulus lists; each including one version of each item, with equal numbers of items in each of the four conditions. An example item is as follows:

Literal (victim perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Charlie felt that this was a very/ **mean**, critical/ thing to say. post-critical/

Literal (protagonist perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Ray had intended for this to be a very/ **mean**, critical/ thing to say. post-critical/

Ironic (victim perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Charlie felt that this was a very/ **mean**, critical/ thing to say. post-critical/

Ironic (protagonist perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Ray had intended for this to be a very/ **mean**, critical/ thing to say. post-critical/

The archived data file (titled Experiment 3a) contains eye movement data for the critical analysis regions outlined in the example above. In the file, Column A is the participant number (from 1 to 28), column B is the item number (from 1 to 32), and Column C is the condition number (from 1 to 4). In addition, Column D indicates whether the material was written from the perspective of the victim, or the protagonist, and Column E indicates whether the criticism was delivered literally, or ironically. Columns F to M contain the eye movement data. Specifically:

Column F contains first-pass reading times for the critical region.

Column G contains first-pass reading times for the post-critical region.

Column H indicates the first-pass regressions out for the critical region.

Column I indicates the first-pass regressions out for the post-critical region.

Column J contains regression path reading times for the critical region.

Column K contains regression path reading times for the post-critical region.

Column L contains second pass reading times for the critical region.

Column M contains second pass reading times for the post-critical region.

Experiment 4b.

In this experiment, 36 participants listened to 240 materials whilst their EEG was recorded. Each item consisted of three sentences. The first was a context sentence (e.g., *Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it.*), which was designed to set-up the subsequent comment to be interpreted as criticism. The criticism could

be either delivered literally (e.g., *Ray said to him, "You're so weak."*), or sarcastically (e.g., *Ray said to him, "You're so strong."*). The target sentence described the emotional response elicited in the recipient of the comment (e.g., *Charlie found the comment to be very upsetting.*), or that the protagonist had intended to elicit (e.g., *Ray had intended for Charlie to find the comment very upsetting.*). The emotional response described in the target sentence always related to hurtfulness, using a variety of expressions such as *wounded*, *hurt*, etc. The sarcastic conditions could be either delivered in a neutral or sarcastic tone of voice, resulting in six experimental conditions (Literal-Natural Listener Perspective, Literal-Natural Speaker Perspective, Sarcasm-Natural Listener Perspective, Sarcasm-Sarcastic Listener Perspective, Sarcasm-Natural Speaker Perspective, Sarcasm-Sarcastic Speaker Perspective). An example item is as follows:

Sarcasm-Natural (listener perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Charlie found the comment to be very **upsetting**.

Sarcasm-Sarcastic (listener perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Charlie found the comment to be very **upsetting**.

Literal-Natural (listener perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Charlie found the comment to be very **upsetting**.

Sarcasm-Natural (speaker perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Ray had intended for Charlie to find the comment very **upsetting**.

Sarcasm-Sarcastic (speaker perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so strong." Ray had intended for Charlie to find the comment very **upsetting**.

Literal-Natural (speaker perspective): Charlie was desperately trying to undo the lid of a jar, but was having difficulty with it. Ray said to him, "You're so weak." Ray had intended for Charlie to find the comment very **upsetting**.

The archived data file (titled Experiment4b_ERP) contains ERP data time locked to the critical word (e.g., upsetting). In the file, Column A is the participant number (vpNum = 37-72), column B is the condition number (1 = Sarcasm-Natural Listener Perspective, 2 = Sarcasm-Sarcastic Listener Perspective, 3 = Literal-Natural Listener Perspective, 4 = Sarcasm-Natural Speaker Perspective, 5 = Sarcasm-Sarcastic Speaker Perspective, 6 = Literal-Natural Speaker Perspective), Column C is the window number (1 to 5), Column D and E indicate the start and end time of the mean ERP amplitude measurement time interval, and Columns F to BV indicate the electrode positions (FP1 to M2).

Related Resources

Filik, R., Turcan, A., Thompson, D., Harvey, N., Davies, H., & Turner, A. (in press). Sarcasm and emoticons: Comprehension and emotional impact. *Quarterly Journal of Experimental Psychology*.

http://www.tandfonline.com/doi/full/10.1080/17470218.2015.1106566

Thompson. D, Mackenzie, I. G., Leuthold, H., & Filik, R. (2016). Emotional responses to irony and emoticons in written language: Evidence from EDA and facial EMG. *Psychophysiology*, 53, 1054-1062.

http://onlinelibrary.wiley.com/doi/10.1111/psyp.12642/full